FEDERAL REGISTER

VOLUME 13 NUMBER 134

Washington, Saturday, July 10, 1948

TITLE 5—ADMINISTRATIVE PERSONNEL

Chapter I—Civil Service Commission

PART 27—EXCLUSION FROM PROVISIONS OF THE FEDERAL EMPLOYEES PAY ACT OF 1945, AS AMENDED, AND THE CLASSIFICATION ACT OF 1923, AS AMENDED, AND ESTABLISHMENT OF MAXIMUM STIPENDS FOR POSITIONS IN GOVERNMENT HOSPITALS FILLED BY STUDENT OR RESIDENT TRAINEES

MISCELLANEOUS AMENDMENTS

1. Section 27.1 is amended by the addition of the following at the end of the section:

§ 27.1 *Exclusion from provisions of Federal Employees Pay Act and Classification Act* * * *

Interns in clinical psychology, U. S. Public Health Service, second year approved post-graduate training (pre-doctoral)

Interns in hospital administration, U. S. Public Health Service, second year approved post-graduate training.

Student laboratory technicians, U. S. Public Health Service, one year approved training after a minimum of two years college level training.

Student X-ray technicians, U. S. Public Health Service, eighteen months approved training.

2. Section 27.2 is amended by the addition of the following at the end of the section:

§ 27.2 *Maximum stipends prescribed* * * *

Clinical psychology interns—U. S. Public Health Service:	
Second year approved post-graduate training (pre-doctoral)	$1,600
Hospital administration interns—U. S. Public Health Service:	
Second year approved post-graduate training	1,600
Student laboratory technicians—U. S. Public Health Service:	
1 year approved training, after a minimum of 2 years college level training	900
Student X-ray technicians—U. S. Public Health Service:	
First nine months approved training (a month)	65
Second nine months approved training (a month)	75

(Pub. Law 330, 80th Cong.)

The foregoing amendments are effective as of July 1, 1948.

UNITED STATES CIVIL SERVICE COMMISSION,
[SEAL] H. B. MITCHELL,
President.

[F. R. Doc. 48-6148; Filed, July 9, 1948; 8:46 a. m.]

TITLE 7—AGRICULTURE

Chapter VII—Production and Marketing Administration (Agricultural Adjustment)

PART 701—NATIONAL AGRICULTURAL CONSERVATION PROGRAM

SUBPART—1949

Assistance will be given to farmers carrying out conservation practices under the 1949 Agricultural Conservation Program (hereinafter referred to as the 1949 program) in accordance with the provisions of this bulletin and such modifications thereof as may hereafter be made. The provisions of this program as contained herein are applicable to the Continental United States, Alaska, Hawaii, Puerto Rico, and the Virgin Islands.

Sec.
- 701.1001 Distribution and control of funds.
- 701.1002 Basis for approval of practices, adoptation of practices and rates of assistance, local and special practices, pooling agreements, and State or Federal aid.
- 701.1003 Conservation practices and maximum rates of assistance.
- 701.1004 Division of payments.
- 701.1005 Increase in small payments.
- 701.1006 Payments limited to $750.
- 701.1007 Conservation materials and services.
- 701.1008 General provisions relating to payments.
- 701.1009 Application for payment.
- 701.1010 Appeals.
- 701.1011 State handbooks, bulletins, instructions, and forms.
- 701.1012 Definitions.
- 701.1013 Authority, availability of funds, and applicability.

AUTHORITY: §§ 701.1001 to 701.1013, inclusive, issued under secs. 7-17, 49 Stat. 1148-1151, as amended, Pub. Laws 712, 697, 80th Cong.; 16 U. S. C. 590g-590q).

§ 701.1001 *Distribution and control of funds*—(a) *State funds.* Funds available for conservation practices will be

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A numerical list of the parts of the Code of Federal Regulations affected by documents published in this issue. Proposed rules, as opposed to final actions, are identified as such.

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distributed among States on the basis of their conservation needs, but the proportion allocated to any State shall not be reduced more than 15 percent from its proportionate 1946 distribution.

(b) *Control of funds*—(1) *Continental United States.* The State committee will allocate the funds available for conservation practices among the counties within the State. The county committee, in accordance with the method approved by the State committee, will determine the amount of assistance to be made available to each farm, taking into consideration the county allocation and the conservation needs of the county and of the individual farms.

(2) *Insular Area (Alaska, Hawaii, Puerto Rico, and Virgin Islands).* Farm allowances shall be established in each area for the purpose of limiting assistance to available funds. Farm allowances shall be based upon formulas which will provide for the equitable distribution of funds on the basis of individual farm conservation needs.

(c) *Adjustments.* If the total estimated earnings under the program exceed the total funds available for assistance, assistance will be reduced equitably in States where the estimated earnings exceed the amount available for use in the State.

§ 701.1002 *Basis for approval of practices, adaptation of practices and rates of assistance, local and special practices, pooling agreements, and State or Federal aid*—(a) *Basis for approval of practices.* Practices to be approved will include only those which maintain or increase soil fertility; control and prevent soil erosion caused by wind or water; encourage conservation and better agricultural use of water; or conserve and increase range and pasture forage. The practices to be approved for any State or area will be those best adapted to achieve sound soil and water conservation and use which will not be carried out in desired volume on the basis of relative conservation needs unless assistance is given therefor. Except as provided in paragraphs (b) (c) and (d) of this section, the conservation practices for which assistance will be given in any State or area, and the rates of assistance for such practices, will be those recommended by the State committee and approved by the Agricultural Conservation Programs Branch, Production and Marketing Administration (hereinafter referred to as the ACP Branch) within the limitations specified in § 701.1003.

(b) *Adaptation of practices and rates of assistance.* In order to encourage the performance of practices which are needed most on all farms or on groups of farms in a county, the county committee, with the approval of the State committee, may designate from the practices approved for the State or area those practices which will be applicable on all farms or designated groups of farms in the county, and may approve rates of assistance lower than the rates of assistance approved for general use in the State or area. The State committee, upon recommendation of the county committee and concurrence of the ACP Branch, may approve a rate of assistance for one practice in a county higher than the maximum rate specified for such practice in § 701.1003: *Provided,* The increased rate of assistance is needed to introduce a new conservation practice into the county or to bring about a needed increase in the extent to which a conservation practice otherwise would be carried out.

(c) *Local practice.* Where a local conservation problem exists for which an appropriate practice is not included in the practices in § 701.1003, the county committee may recommend, and the State committee and technical committee with the concurrence of the ACP Branch may approve, one such practice for the county.

(d) *Special practice.* To permit further local adaptation of practices, the county committee may recommend, and the State committee may approve, one practice for the county from the practices included in § 701.1003 which is not included in the list of practices approved for the State.

(e) *Pooling agreements.* Producers in any local area may agree in writing, with the approval of the county and State committees, to perform designated amounts of practices which the State committee determines are necessary to conserve or improve the agricultural resources of the community. For purposes of payments, practices carried out under such an approved written agreement will be regarded as having been carried out on the farms of the producers who performed the practices.

(f) *Practices carried out with State or Federal aid.* The extent of any practice shall not be reduced because it is carried out with materials or services furnished by the ACP Branch or by any agency of a State to another agency of the same State. In other cases of State or Federal aid, the total extent of any practice performed shall be reduced for purposes of payment by the percentage of the total cost of the practice which the county

committee determines was furnished by a State or Federal agency.

§ 701.1003 *Conservation practices and maximum rates of assistance.* Paragraphs (a) to (g) inclusive, of this section contain a general description of the conservation practices of the 1949 program and the maximum rates of assistance for the practices. Information with respect to the several practices for which assistance will be given when carried out on a particular farm and the exact specifications and rates of assistance for such practices may be obtained from the county committee for the county in which the farm is located, or from the State committee (11 F. R. 177A-285)

(a) *Practices to protect soil from wind and water erosion—(1) Building terraces to control the flow of water on sloping land.* Necessary outlets and waterways must be provided.

Maximum assistance. 70 percent of the average cost of construction of the terraces.

(2) *Constructing diversion terraces or ditches to collect or divert excess water*

Maximum assistance. $0.10 per cubic yard of earth moved.

(3) *Constructing individual terraces around coffee trees and mulch terraces around canilla plants to control erosion.* (Applicable only in the Insular Area.)

Maximum assistance. $2.00 per 100 terraces.

(4) *Establishing permanent sod waterways to dispose of excess water without causing erosion.* Applicable only to waterways established in 1949, unless the county committee determines that an old waterway needs reshaping, reseeding, or resodding. Assistance for waterways established by lifting farm implements when breaking out sod or hay land is limited to the year in which the waterway is so established.

Maximum assistance. (i) $0.75 per 1,000 square feet for waterways established by shaping and seeding or sodding.

(ii) $0.25 per 1,000 square feet for waterways established by lifting farm implements when breaking out sod or hay land.

(iii) $0.10 per cubic yard of earth moved with dirt-moving equipment in reshaping and filling.

(5) *Building outlets for water channels or building flumes or chutes to dispose of water without gullying.*

Maximum assistance. (i) 50 percent of the average cost of material used, but not to exceed $10.00 per cubic yard of concrete or $6.00 per cubic yard of rubble masonry.

(ii) $0.50 per square yard of exposed surface on log dams.

(iii) $0.50 per square yard of exposed surface of wire-bound mulch.

(iv) $0.15 per square yard of exposed surface of wire dams.

(6) *Building erosion control dams or stone or vegetative barriers to prevent or heal the gullying of farm land and reduce run-off of water*

Maximum assistance. (i) $0.10 per cubic yard of earth moved in the construction of the dams, wings, and walls.

(ii) 50 percent of the average cost of concrete or rubble masonry used, but not to exceed $10.00 per cubic yard of concrete or $6.00 per cubic yard of rubble masonry.

(iii) 50 percent of the average cost of pipe delivered to the farm.

(iv) $1.50 per cubic yard of rock used, for rock or rock and brush dams.

(v) 80 percent of the cost of constructing stone barriers for diverting and spreading surface-run-off. (Applicable only in the Insular Area.)

(vi) $0.25 per 100 linear feet for planting vegetative barriers to impede the flow of surface run-off. (Applicable only in the Insular Area.)

(7) *Constructing permanent riprap.* Applicable only along stream banks, in gullies, on the face of dams, or in water courses, for controlling erosion. The types of material must be specified in the State handbook.

Maximum assistance. (i) $0.50 per square yard of exposed riprap surface, or

(ii) $1.50 per cubic yard of riprap material.

(8) *Farming on the contour to protect against washing or blowing of soil to reduce run-off and conserve water—(i) Establishing contour stripcropping.* The types of eligible protected and protective crops and uses must be designated. No payment will be made under this subdivision for any acreage for which payment is made under subdivision (iii) or (iv) of this subparagraph.

Maximum assistance. $4.00 per acre.

(ii) *Removing stone walls and hedgerows to permit terracing and contour farming.*

Maximum assistance. 50 percent of the cost of removal, but not to exceed $5.00 per square rod of surface occupied by the stone wall or hedgerow before removal.

(iii) *Contour farming row crops.* The crop stubble or crop residue must be left standing over winter, or a winter cover crop established, or protective tillage operations carried out.

Maximum assistance. (a) $1.50 per acre where all cultural operations are on the contour.

(b) $1.00 per acre where only the planting and cultivating are on the contour.

(iv) *Contour farming drilled or close-sown crops.*

Maximum assistance. (a) $0.75 per acre where all cultural operations are on the contour.

(b) $0.50 per acre where only the seeding operation is on the contour.

(v) *Contour listing, contour chiseling, basin listing, pit cultivation, or emergency listing at right angles to prevailing winds, and other approved tillage operations to control wind or water erosion, when not a part of a seeding operation.*

Maximum assistance. (a) $0.60 per acre when used to protect summer-fallowed land.

(b) $0.30 per acre on other cropland.

(vi) *Planting orchards and vineyards on the contour*

Maximum assistance. $7.50 per acre.

(9) *Cross-slope farming to protect against washing and blowing of soil and to reduce run-off of water in areas where contouring is impracticable—(i) Establishing cross-slope stripcropping.* Contour lines must be established and all cultural operations performed as nearly as practicable on the contour. No payment will be made under this subdivision for any acreage for which payment is made under subdivisions (ii) and (iii) of this subparagraph.

Maximum assistance. $3.00 per acre.

(ii) *Cross-slope farming row crops.* Contour lines must be established and all cultural operations performed as nearly as practicable on the contour. The crop stubble or crop residue must be left standing over the winter, or a winter cover crop established, or protective tillage operations carried out.

Maximum assistance. $1.00 per acre.

(iii) *Cross-slope farming drilled or close-sown crops.* Contour lines must be established and all cultural operations performed as nearly as practicable on the contour.

Maximum assistance. $0.35 per acre.

(10) *Field stripcropping to protect soil from wind or water erosion.* The maximum and minimum widths of the strips and the types of eligible protected and protective crops and uses must be designated.

Maximum assistance. (i) $0.50 per acre for systems with strips in excess of 10 rods in width.

(ii) $0.75 per acre for systems with strips not in excess of 10 rods in width.

(iii) $0.75 per acre for systems using sawfly strips.

(11) *Managing crop residues to protect soil from wind or water erosion—(i) Crop residue management.* Performing tillage operations which will partially incorporate a heavy growth of stubble or straw into the surface soil to prevent erosion. No assistance will be given if the acreage has been burned over or the straw removed.

Maximum assistance. (a) $1.00 per acre when used to protect summer-fallowed land.

(b) $0.60 per acre on other cropland.

(ii) *Leaving stalks of sorghum, Sudan grass, millet, or broomcorn as a protection against wind erosion.* The stalks must be left on the land until spring farming operations are begun. No grazing is permitted. The stalks on broadcast crops must be left at least 8 inches high and at least 10 inches high on drilled or row crops. Applicable only in wind erosion areas approved by the State committee and included in the State handbook.

Maximum assistance. $0.35 per acre.

(12) *Bringing adequate amounts of clod-forming subsoil to the surface on sandy cropland subject to wind erosion to protect soil from blowing.* The heavier subsoil must be brought to the surface. Applicable only in wind erosion areas designated by the State committee and included in the State handbook. No assistance will be given on any acreage for which payment was made for this practice under any previous program.

Maximum assistance. (i) $1.50 per acre for plowing 12 inches but less than 15 inches deep.

(ii) $2.00 per acre for plowing 15 inches but less than 18 inches deep.

(iii) $3.00 per acre for plowing 18 inches or deeper.

(13) *Establishing a perennial cover of adapted legumes and grasses in orchards and vineyards to protect against erosion.*

Volunteer stands and any acreage cut for hay are not eligible. Approved kinds of cover must be designated in the State handbook.

Maximum assistance. 70 percent of the average cost of the seed.

(14) *Establishing a permanent cover of kudzu, perennial lespedeza, perennial grasses, or a mixture of legumes and perennial grasses on steep slopes or in waterways or on land so subject to erosion that it should be retired from cultivation.*

Maximum assistance. 80 percent of the average cost of the seed, sod, crowns, or sprigs.

(15) *Mulching to control wind erosion or in connection with tree planting on blow land.* Only straw, hay, or cotton burs may be used. The type of material must be specified in the State handbook and cannot include manure.

Maximum assistance. $1.00 per ton of material used.

(16) *Maintaining a permanent vegetative cover in non-terraced orchards on slopes greater than 2 percent to prevent erosion.* The cover must be mowed and the residue left on land. (Applicable only in the Insular Area.)

Maximum assistance. $1.00 per acre.

(17) *Planting trees in established coffee groves to control erosion.* (Applicable only in the Insular Area.)

Maximum assistance. $0.05 per tree.

(b) *Practices to develop cropping systems that protect the soil and restore and maintain soil productivity*—(1) *Growing adapted green manure or cover crops for soil protection and improvement.* Pasturing consistent with good management is permitted. Volunteer stands will not qualify for assistance.

(i) *Winter annual legumes or annual ryegrass.* The practice must be carried out in keeping with technical specifications approved by the State committee and included in the State handbook, or a good stand and good growth must be obtained.

Maximum assistance. 70 percent of the average cost of seed.

(ii) *Summer annual legumes.* A good stand and good growth must be obtained and left on the land or turned under. Vegetable and truck crops for sale, soybeans or mung beans for seed or oil, all peanuts, and seedings (except crotalaria) interplanted with row crops, are not eligible for assistance.

Maximum assistance. 70 percent of the average cost of seed.

(iii) *Adapted non-legumes.* A good stand and good growth must be obtained and left on the land or turned under. Small grains and any acreage harvested for seed or hay are not eligible for assistance.

Maximum assistance. 70 percent of the average cost of seed.

(iv) *Small grains.* A good stand and good growth must be obtained and left on the land or turned under. Acreages harvested for hay or grain are not eligible for assistance.

Maximum assistance. (a) $2.50 per acre for rye or wheat.

(b) $1.50 per acre for oats, millet, barley, or buckwheat.

(v) *Red clover, alsike clover, or sweetclover used for green manure only.* A good stand and a good growth must be turned under.

Maximum assistance. $1.50 per acre.

(2) *Growing an increased acreage of winter cover consisting of a mixture of at least one winter annual legume and either a grass or a small grain for the combined purpose of protecting the soil against losses from erosion and leaching and to provide winter pasture.* Applicable only when carried out in keeping with specifications covering fertilization, adapted seed mixtures, and management approved by the State committee and included in the State handbook. No assistance will be given if any of the acreage is harvested for hay or grain.

Maximum assistance. 70 percent of the average cost of seed.

(3) *Establishing or improving permanent pastures by seeding, sodding, or sprigging adapted legumes and grasses or other adapted forage plants.*

Maximum assistance. 80 percent of the average cost of seed, sod, or sprigs.

(4) *Applying mineral elements to make possible the establishment and adequate growth of soil-conserving crops*—(i) *Liming materials.*

Maximum assistance. (a) 60 percent of the average cost of bulk ground limestone containing at least 80 percent calcium carbonate equivalent on a delivered-to-the-farm basis.

(b) The rate for other liming materials may not exceed the lower of:

(1) The rate for an equivalent amount of bulk ground limestone containing at least 80 percent calcium carbonate equivalent.

(2) 60 percent of the average cost of the equivalent material delivered to the farm.

(ii) *Superphosphate, potash, or basic slag.* Application must be made at a time so that the eligible crop will receive the principal benefit of the material. Applicable only in connection with the following crops and uses:

(a) Rotation and permanent pastures, excluding small grain;

(b) New seedings of grasses or legumes, excluding small grain, vegetable or truck crops for sale, soybeans or mung beans for oil, and all peanuts, but including 1948 fall seedings of small grain which are overseeded with a grass or legume in the spring of 1949;

(c) Winter cover crops, excluding small grain seeded alone;

(d) Hay crops, excluding small grain, Sudan grass, and sorghums;

(e) Green manure or cover crops in orchards or vineyards;

(f) Summer legumes grown for cover, for hay, or for seed (except for oil),

(g) Permanent sod waterways;

(h) Superphosphate alone when added to manure in stable or on dropping boards when applied to the above crops or to any crop on a farm using a rotation in which at least one-half of the cropland is devoted to conserving crops; and

(i) Shade trees in coffee or vanilla groves.

Rates of assistance must be established for each of the following materials if included in the State handbook: Normal superphosphate containing 20 percent or less available phosphoric acid (P_2O_5); concentrated superphosphate containing more than 20 percent available phosphoric acid (P_2O_5), potash and basic slag. Assistance for mixed fertilizers will be determined on the basis of the rates established for normal superphosphate and potash.

Maximum assistance. 60 percent of the average cost of the straight material at siding, dealer's warehouse, or plant.

(iii) *Rock phosphate or colloidal phosphate.*

Maximum assistance. (a) 50 percent of average cost at siding for rock phosphate containing at least 23 percent total phosphoric acid (P_2O_5).

(b) For colloidal phosphate or lower-grade rock phosphate, the rate may not exceed the lower of:

(1) The rate for an equivalent amount of rock phosphate containing at least 23 percent total phosphoric acid (P_2O_5).

(2) 50 percent of the average cost at siding for the lower-grade material.

(iv) *Minor elements.* Materials used as insecticides are not eligible.

Maximum assistance. 65 percent of the average cost at siding, dealer's warehouse, or plant.

(5) *Clearing land to permit the adoption of a better soil conserving cropping system or reforestation or similar retirement from cultivation of severely eroding lands.* No assistance will be given for clearing a stand of merchantable timber or pulpwood.

Maximum assistance. 50 percent of the average cost of clearing, but not to exceed $10.00 per acre cleared.

(6) *Mulching for soil improvement and maintenance purposes*—(i) *Applying mulching material to orchards and vineyards.*

Maximum assistance. 60 percent of the average cost of the material delivered to the farm, but not to exceed $5.00 per ton, air-dry weight.

(ii) *Applying sugarcane mill refuse to cane fields harvested or started in fallow during 1949.* Material to be used will include cane leaf trash, soil washings, bagasse, and filter cake. (Applicable only in the Insular Area.)

Maximum assistance. 50 percent of the average cost of application.

(iii) *Applying coarsely shredded pineapple plants to pineapple fields.* Material must be laid in a solid blanket at least 3 inches thick. (Applicable only in the Insular Area.)

Maximum assistance. $5.00 per acre.

(iv) *Applying coffee pulp to coffee trees.*

Maximum assistance. $1.00 per ton.

(7) *Controlling perennial noxious weeds as a necessary step in soil or water conservation.* The types of weeds must be designated in the State handbook. Applicable only on farms where the county committee determines there is no likelihood of reinfestation from adjacent farms or contiguous land. No crop may be taken from the land where clean cultivation is used.

Maximum assistance. (i) $7.50 per acre for continuous clean cultivation, except for Johnson grass and quackgrass.
(ii) $5.00 per acre for continuous clean cultivation of Johnson grass or quackgrass.
(iii) $0.02 per pound of agricultural mesh borax.
(iv) $0.018 per pound of borax, special undried concentrates.
(v) 50 percent of the average cost of other State committee approved chemicals.

(c) *Practices to restore and maintain range and permanent pastures*—(1) *Improving and maintaining a desirable vegetative cover on range land*—(i) *Grazing land management to maintain or improve range and watershed condition by performing those practices necessary to secure proper distribution of grazing livestock or making changes in management or adjustments in use which the county committee determines are necessary to accomplish moderate utilization of the forage crop.* No assistance will be given if the county committee determines that any area of the ranch is overgrazed.

Maximum assistance. The smaller of:
(a) The amount approved by the county committee, or
(b) $50.00 plus $0.04 per acre of grazing land, or
(c) $0.75 per acre of grazing land.

(ii) *Natural reseeding of desirable range forage plants by deferred grazing.* Assistance will not be given on more than 25 percent of the grazing land in the unit or for any of the deferred area which is cut for hay, except that the State committee, with the approval of the ACP Branch, may waive the percentage limitation for any local area where deferment of a larger percentage is necessary to conserve the range resources. No assistance will be given if the county committee determines that any area of the ranch is overgrazed.

Maximum assistance. (a) $0.12 per acre deferred, except that where the carrying capacity is less than one animal unit for each 30 acres, the rate must be reduced proportionately and set forth in the State handbook. (Applicable only in the Continental United States.)
(b) $0.04 per acre per month for the acreage deferred. (Applicable only in the Insular Area.)

(iii) *Artificial reseeding.* Seeding, sodding, or sprigging adapted perennial grasses, perennial legumes, and other pasture forage plants for range improvement. Where rates of assistance are determined on an acre basis, the recommended seeding rates, kinds of seeds, and proportion of seed in mixture must be set forth in the State handbook. No assistance will be given if the county committee determines that the area seeded is overgrazed.

Maximum assistance. 80 percent of the average cost of the seed, sod, or sprigs.

(iv) *Eliminating competitive plants and shrubs on noncrop pasture and range land.* Eligible plants must be designated in the State handbook. No assistance will be given if the county committee determines that the area is overgrazed.

Maximum assistance. $5.00 per acre.

(2) *Livestock water development to obtain proper distribution of livestock and prevent overgrazing.* The practice will not be approved if the county committee determines that the area to be served by the development is overgrazed.

(i) *Constructing wells for livestock water.* Adequate storage facilities must be provided. Pumping equipment must be installed, except in connection with artesian wells. Assistance will not be given for wells constructed at or for the use of headquarters.

Maximum assistance. (a) $1.00 per linear foot of well with a bore taking a casing less than 4 inches in diameter, and all artesian wells.
(b) $2.00 per linear foot of well with a bore taking a casing of 4 inches but less than 6 inches in diameter.
(c) $3.00 per linear foot of well with a bore taking a casing of 6 inches or more in diameter.

(ii) *Developing springs and seeps for livestock water*

Maximum assistance. (a) $0.50 per cubic foot of excavation in rock, and
(b) $0.30 per cubic foot of excavation in soil or gravel, or
(c) $0.50 per cubic foot of storage capacity constructed.

(iii) *Building dams, pits, and ponds for collecting and storing livestock water including the enlargement of inadequate structures.* No assistance will be given for cleaning or maintaining an existing structure.

Maximum assistance. (a) $0.10 per cubic yard of material moved.
(b) 50 percent of the average cost of concrete or rubble masonry used, but not in excess of $10.00 per cubic yard of concrete or $6.00 per cubic yard of rubble masonry.
(c) 50 percent of the average cost of fencing materials, pipe, and seeding or sodding the dam and filter strips.

(iv) *Installing pipe lines for livestock water*

Maximum assistance. 50 percent of the average cost of pipe, except that the assistance for pipe in excess of 2 inches in diameter may not exceed the assistance which may be given for 2-inch pipe.

(v) *Constructing new large water storage at wells and springs for livestock water*

Maximum assistance. 50 percent of the average cost of the material used, but not in excess of $10.00 per cubic yard of concrete or $6.00 per cubic yard of rubble masonry.

(vi) *Lining earthen reservoirs for livestock water*

Maximum assistance. 50 percent of the average cost of approved material used, but not in excess of $10.00 per cubic yard of concrete or $6.00 per cubic yard of rubble masonry.

(vii) *Constructing permanent artificial watersheds and storage tanks for accumulating livestock water.* (Applicable only in the Insular Area.)

Maximum assistance. 50 percent of the average cost of material.

(3) *Constructing stock trails through rock or similar natural barriers to obtain better distribution of grazing.* No assistance will be given if the county committee determines that the grazing area thus made available is overgrazed.

Maximum assistance. 50 percent of the average cost of construction.

(4) *Constructing or maintaining fireguards to protect grazing land.* The fireguards must have a minimum width of 10 feet.

Maximum assistance. $1.20 per 1,000 linear feet.

(5) *Constructing permanent fences to obtain better distribution of grazing, thereby preventing overgrazing, or to protect farm woodlots.* No assistance will be given for maintaining existing fences.

Maximum assistance. 50 percent of the average cost of the fencing material used.

(6) *Managing pastures other than range to obtain better cover.* The methods of management must be included in the State handbook.

Maximum assistance. (i) $1.00 per acre for seeded supplemental pasture.
(ii) $0.50 per acre for mountain meadow or hay land used for supplemental pasture.

(7) *Controlling weeds in permanent pasture by mowing to aid and maintain desirable pasture plants.* Limited to farms on which this practice is carried out in combination with such seeding, liming, and fertilizing measures as are required for the development or maintenance of a good pasture cover on the acreage mowed. The mowings may not be used for hay or sold for any purpose.

Maximum assistance. $0.50 per acre per year.

(d) *Practices to conserve and obtain efficient use of agricultural water*—(1) *Subsoiling to permit better penetration of water* (i) Subsoiling to a depth which will effectively shatter the hardpan or plow sole.

Maximum assistance. (a) $2.25 per acre for intervals up to 4 feet.
(b) $1.50 per acre for intervals over 4 feet but not over 7 feet.

(ii) *Rotary subsoiling.*

Maximum assistance. $0.25 per acre.

(2) *Furrowing, chiseling, ripping, scarifying, or listing noncrop grazing land to retard run-off and improve water penetration.* The operations must be as nearly as practicable on the contour.

Maximum assistance. $0.25 per 1,000 linear feet.

(3) *Constructing spreader ditches or dikes to collect or spread water*

Maximum assistance. $0.10 per cubic yard of earth moved.

(4) *Reorganizing farm irrigation systems to conserve water and prevent erosion.* The reorganization must be carried out in accordance with a written plan approved by the county committee.

Maximum assistance. (i) $0.10 per cubic yard of material moved in the construction or enlargement of permanent ditches, dikes, or laterals. No assistance will be given for cleaning a ditch.
(ii) 50 percent of the average cost of the approved material used in lining ditches or reservoirs, but not to exceed $10.00 per cubic yard of concrete or $6.00 per cubic yard of rubble masonry.
(iii) 50 percent of the average cost of material used in constructing or installing siphons, flumes, drop boxes or chutes, weirs, diversion gates, and pipe, but not to exceed $10.00 per cubic yard of concrete or $6.00

per cubic yard of rubble masonry. No assistance will be given for repairs or replacements of existing structures.

(iv) 50 percent of the average cost of pipe used in installation of main lines and standpipes for overhead irrigation. No assistance will be given for repairs or replacements of existing structures, or for the installation of laterals.

(5) *Leveling land for more efficient use of irrigation water or to prevent erosion.* No assistance will be given for floating or for carrying out this practice on any land for which a payment for leveling was made under a previous program. Not applicable in connection with any land for which water is not available.

Maximum assistance. $0.10 per cubic yard of earth moved.

(6) *Constructing or enlarging dams for irrigation water.* No assistance will be given for material moved in cleaning a reservoir.

Maximum assistance. (i) $0.10 per cubic yard of material moved.

(ii) 50 percent of the cost of concrete or rubble masonry used, but not to exceed $10.00 per cubic yard of concrete or $6.00 per cubic yard of rubble masonry.

(e) *Drainage practices to permit land use adjustments needed in establishing soil conserving cropping systems, or to permit other measures required to conserve soil and water resources*—(1) *Installing or improving drainage systems*—(i) *Open farm drainage ditches.* No assistance will be given for cleaning or maintaining a ditch.

Maximum assistance. $0.10 per cubic yard of material moved.

(ii) *Tile, fiber pipe, or lumber box drains.* No assistance will be given for repairing or maintaining existing drains.

Maximum assistance. 50 percent of the average cost of material delivered to the farm, except that the rate for tile or fiber pipe may not exceed that for the 8-inch size, and that the rate for lumber box drains may not exceed that for such drains with a cross section of 50 square inches.

(f) *Practices to establish, restore, and maintain farm woodland*—(1) *Planting forest trees and shrubs on farm land for forestry purposes, windbreaks, and for erosion control.* Plantings must be protected from fire and grazing.

Maximum assistance. (i) $1.00 per 100 trees or shrubs, or (ii) $7.50 per acre, or (iii) 50 percent of the cost of trees or shrubs.

(2) *Improving a stand of forest trees.* Technical assistance must be utilized. The minimum stand of desirable species which must be present in order for the acreage to be eligible must be shown in the State handbook.

Maximum assistance. $5.00 per acre.

(3) *Maintaining a stand of trees and shrubs in windbreaks.* Applicable only in connection with windbreaks planted between January 1, 1944, and January 1, 1949. Replanting is required if necessary to bring the stand up to normal. The windbreaks must be protected from fire and grazing.

Maximum assistance. $3.00 per acre.

(4) *Constructing firebreaks or fire lanes.*

Maximum assistance. (i) ¢0.50 per 1,000 linear feet for each foot of width for widths not in excess of 15 feet, and

(ii) ¢0.40 per 1,000 linear feet for each foot of width in excess of 15 feet, up to 25 feet.

(g) *Practices to meet local or special conservation needs*—(1) *Local conservation practice.* The county committee may select, with the prior approval of the State committee and technical committee and the concurrence of the ACP Branch, one practice of a local nature not included in this section which has a definite soil or water conservation value or which will maintain or increase soil fertility or conserve and increase range and pasture forage and will meet special needs in the county. The practice selected under this authority must be carried out under specifications approved by the State committee. The State committee shall determine the amount of funds which may be expended on this practice in any county.

Maximum assistance. That percentage of the cost specified as the maximum for a practice of a similar type included in this section.

(2) *Special conservation practice.* With the approval of the State committee, the county committee may select for use in the county one practice included in this section for which there is a need locally, but which is not selected for use in the State.

Maximum assistance. The maximum assistance for the practice set forth in this section.

(h) *Prior approval.* Prior approval of the county committee is required for the practices contained in paragraphs (a) (1) (2) (4), (5) (6) (7) (8) (ii), (14) (17), (b) (5) (7), (c) (1) (i), (ii), (iv), (2) (i) (ii), (iii), (iv) (v), (vi) (vii) (3) (5) (6), (d) (3) (4) (5), (6) (e) (1) (i) (ii), (f) (1) (2) (3), (4) of this section. Prior approval, where required, must be given before the practice is performed and shall include, where applicable, location, type of material, species, types and kinds of seed, planting or seeding dates, designated types or methods of construction, and other similar information which will insure proper performance of the practice.

§ 701.1004 *Division of payments*—(a) *Conservation practice payments.* The payment earned in carrying out practices with conservation materials or services shall be credited to the producer to whom the materials or services are furnished. Payment for practices performed with conservation materials and services shall have priority over payment for other practices. The payment earned in carrying out other practices shall be paid to the producer who carried out the practices. If more than one producer contributed to the carrying-out of such practices, the payment shall be divided in the proportion that the county committee determines the producers contributed to the carrying-out of the practices. In making this determination, the county committee shall take into consideration the value of the labor, equipment, or material contributed by each producer toward the carrying-out of each practice on a particular acreage, assuming that each contributed equally, unless it is established to the satisfaction of the county committee that their respective contributions thereto were not in equal proportion. The furnishing of land will not be considered as a contribution to the carrying-out of any practice.

(b) *Death, incompetency, or disappearance of producer.* In case of death, incompetency, or disappearance of any producer, his share of the payment shall be paid to his successor, determined in accordance with the provisions of the regulations in ACP-122, as amended (5 F. R. 2875; 6 F. R. 1647, 4430; 9 F. R. 12237).

§ 701.1005 *Increase in small payments.* The payment computed for any person with respect to any farm shall be increased as follows:

(a) Any payment amounting to $0.71 or less shall be increased to $1.00.

(b) Any payment amounting to more than $0.71, but less than $1.00, shall be increased by 40 percent.

(c) Any payment amounting to $1.00 or more shall be increased in accordance with the following schedule:

Amount of payment computed:	*Increase in payment*
$1.00 to $1.99	$0.40
2.00 to 2.99	.80
3.00 to 3.99	1.20
4.00 to 4.99	1.60
5.00 to 5.99	2.00
6.00 to 6.99	2.40
7.00 to 7.99	2.80
8.00 to 8.99	3.20
9.00 to 9.99	3.60
10.00 to 10.99	4.00
11.00 to 11.99	4.40
12.00 to 12.99	4.80
13.00 to 13.99	5.20
14.00 to 14.99	5.60
15.00 to 15.99	6.00
16.00 to 16.99	6.40
17.00 to 17.99	6.80
18.00 to 18.99	7.20
19.00 to 19.99	7.60
20.00 to 20.99	8.00
21.00 to 21.99	8.20
22.00 to 22.99	8.40
23.00 to 23.99	8.60
24.00 to 24.99	8.80
25.00 to 25.99	9.00
26.00 to 26.99	9.20
27.00 to 27.99	9.40
28.00 to 28.99	9.60
29.00 to 29.99	9.80
30.00 to 30.99	10.00
31.00 to 31.99	10.20
32.00 to 32.99	10.40
33.00 to 33.99	10.60
34.00 to 34.99	10.80
35.00 to 35.99	11.00
36.00 to 36.99	11.20
37.00 to 37.99	11.40
38.00 to 38.99	11.60
39.00 to 39.99	11.80
40.00 to 40.99	12.00
41.00 to 41.99	12.10
42.00 to 42.99	12.20
43.00 to 43.99	12.30
44.00 to 44.99	12.40
45.00 to 45.99	12.50
46.00 to 46.99	12.60
47.00 to 47.99	12.70
48.00 to 48.99	12.80
49.00 to 49.99	12.90
50.00 to 50.99	13.00
51.00 to 51.99	13.10

Amount of payment computed—Continued	Increase in payment
$52.00 to $52.99	$13.20
$53.00 to $53.99	13.30
$54.00 to $54.99	13.40
$55.00 to $55.99	13.50
$56.00 to $56.99	13.60
$57.00 to $57.99	13.70
$58.00 to $58.99	13.80
$59.00 to $59.99	13.90
$60.00 to $185.99	14.00
$186.00 to $199.99	(1)
$200.00 and over	(2)

[1] Increase to $200.
[2] No increase.

§ 701.1006 *Payments limited to $750.* The total of all payments made in connection with the 1949 program to any person with respect to farms, ranching units, and turpentine places in the United States (including Alaska, Hawaii, Puerto Rico, and the Virgin Islands) shall not exceed the sum of $750.

All or any part of any payment which has been or otherwise would be made to any person under the 1949 program may be withheld or required to be refunded if he has adopted or participated in adopting any scheme or device designed to evade, or which has the effect of evading, the provisions of this section.

§ 701.1007 *Conservation materials and services*—(a) *Availability.* Liming materials, phosphates, seeds, and other farming materials or services may be furnished by the ACP Branch to producers for carrying out approved practices. Materials or services may not be furnished to producers who are on the Register of Indebtedness, except in those cases where the agency to which the debt is owed notifies the ACP Branch that it temporarily waives its rights for set-off in order to permit the furnishing of materials and services.

Title to any material distributed by the ACP Branch, either directly or through purchase orders, shall vest in the ACP Branch until the material is applied or planted, or all charges for the material are satisfied.

(b) *Cost to producer in cash.* The producer shall pay that part of the cost of the material or service established by the ACP Branch which is in excess of the credit for the use of the material or service in carrying out approved practices. The small payment increase on an amount equivalent to the credit value of properly used conservation materials and services may be advanced as a credit against that part of the cost required to be paid by the producer.

(c) *Deduction.* A deduction shall be made for materials or services furnished by the ACP Branch from the payment of the producer to whom materials or services are furnished. The deduction shall be the sum of the credit value of the conservation materials and services furnished and any amount of small payment increase advanced to the producer, except that (1) where the cost to the ACP Branch is less than the credit rate, the deduction shall be equal to the cost; (2) where the increase in small payment was advanced to the producer under a previous program and the material or service was transferred to the 1949 program, the amount of the increase in small payment to be deducted shall be determined on the 1949 credit value; and (3) where the material or service was transferred to the 1949 program from a previous program and the practice for which furnished is not offered in the county under the 1949 program, the producer may be relieved of the above deductions upon determination by the county committee that the material or service was used in performing the practice for which the material or service was furnished. If the producer misuses any material or service furnished, an additional deduction equal to the original amount of the deduction, excluding any amount of small payment increase advanced to the producer, for the material or service misused shall be made.

Materials or services will be considered as misused, for the purpose of this section, in the following instances:

(1) Where the county committee determines that any conservation material has been applied to crops which are not designated as eligible crops by the county and State committees, unless failure to properly use the material was due to conditions beyond the producer's control.

(2) Where the county committee determines that a structure, such as a terrace or dam, has been willfully or negligently destroyed by a producer in the program year in which the structure was completed.

(3) Where the county committee determines that material has been willfully or negligently destroyed, or has been rendered unusable, by the producer.

(4) Where the county committee determines that, with respect to seed furnished in connection with a green manure or cover crop, the crop is harvested for grain or hay, or is too heavily grazed.

(5) Where the county committee determines that a producer has disposed of material by sale, barter, or some other unauthorized means.

(6) Where the county committee is unable to determine the use or disposition of material because of the failure of a producer to furnish requested information by the closing date designated by the ACP Branch for filing performance reports. However, if the requested information is filed at a later date and the material was properly used, the material will not be considered as misused.

If the deduction for the materials or services exceeds the payment for the producer to whom the materials or services are furnished, the amount of the difference shall be paid by the producer to the Treasurer of the United States.

Any producer to whom materials are furnished shall be responsible to the ACP Branch for any damage to the materials, unless he shows that the damage was caused by circumstances beyond his control. If materials are abandoned or not used during the program year, they may, at the option of the ACP Branch, be transferred to another producer or otherwise disposed of by the ACP Branch at the expense of the producer who abandoned or failed to use the material, or be retained by the producer for use in a subsequent program year.

§ 701.1008 *General provisions relating to payment*—(a) *Breaking out permanent vegetative cover* In any area designated by the ACP Branch as an area subject to serious wind erosion, a deduction of $3.00 shall be made for each acre of native sod or any other permanent vegetative cover broken out during the 1949 program year without the approval of the county committee, if the county committee finds, in accordance with standards approved by the State committee, that the land broken out is not suited to the continuing production of cultivated crops and will become a wind erosion hazard to the community. The deduction shall be made from the payment of the person responsible for breaking out the land after the payment has been increased in accordance with the provisions of § 701.1005.

(b) *Failure to maintain practices under previous programs.* If the county committee determines that any conservation practice carried out under previous agricultural conservation programs is not maintained in accordance with good farming practices, or the effectiveness of any such practice is destroyed during the 1949 program year, a deduction shall be made for the extent of the practice destroyed or not maintained. The deduction rate shall be the 1949 practice rate or, if the practice is not offered in 1949, the practice rate in effect during the year the practice was performed. The deduction shall be made from the payment of the person responsible for destroying or not maintaining the practice after the payment has been increased in accordance with the provisions of § 701.1005.

(c) *Practices defeating purposes of programs.* If the State committee finds that any producer has adopted or participated in any practice which tends to defeat the purpose of the 1949 or previous programs, it may withhold or require to be refunded all or any part of any payment which has been or would be computed for such person.

(d) *Depriving others of payment.* If the State committee finds that any person has employed any scheme or device (including coercion, fraud, or misrepresentation) the effect of which would be or has been to deprive any other person of any payment under the program, it may withhold, in whole or in part, from the person participating in or employing such a scheme or device, or require him to refund in whole or in part, the amount of any payment which has been or would otherwise be made to him in connection with the 1949 program.

(e) *Failure to carry out approved erosion control measures.* Payment will not be made to any person with respect to any farm which he owns or operates in a county if the county committee finds that he has been negligent and careless in his farming operations by failing to carry out approved erosion control measures on land under his control to the extent that any part of such land has become an erosion hazard during the 1949 program year to other land in the community.

(f) *Payment computed and made without regard to claims.* Any payment or share of payment shall be computed and made without regard to questions of title under State law without deduction of claims for advances (except as pro-

vided in paragraph (g) of this section, and except for indebtedness to the United States subject to set-off under orders issued by the Secretary (12 F. R. 1187)) and without regard to any claim or lien against any crop, or proceeds thereof, in favor of the owner or any other creditor.

(g) *Assignments.* Any person who may be entitled to any payment in connection with the 1949 program may assign his payment, in whole or in part, as security for cash loaned or advances made for the purpose of financing the making a crop in 1949. No assignment will be recognized, unless it is made in writing on Form ACP-69 and in accordance with the instructions in ACP-70.

§ 701.1009 *Application for payment*—(a) *Persons eligible to file applications.* An application for payment with respect to a farm may be made by any producer who is entitled to share in the payment determined for the farm, except where his only payment is earned with conservation materials or services furnished by the ACP Branch and the entire small payment increase, if any, earned by the use of the materials or services has been advanced to the producer.

(b) *Time and manner of filing applications and information required.* Payment will be made only upon application submitted on the prescribed form to the county office. Where conservation materials or services are furnished by the ACP Branch, there need be reported on the application for payment with respect to such materials and services only the total credit and deduction value of the materials and services furnished. Payment may be withheld from any person who fails to file any form or furnish any information required with respect to any farm which such person is operating or renting to another. Any application for payment may be rejected if any form or information required of the applicant is not submitted to the county office within the time fixed by the Director, ACP Branch, which time shall be not later than December 31, 1950. At least 2 weeks' notice to the public shall be given of the expiration of a time limit for filing prescribed forms or required information, and any time limit fixed shall afford a full and fair opportunity to those eligible to file the form or information within the period prescribed. Such notice shall be given by mailing notice to the office of each county committee (local Agricultural Extension Agent in the Insular Area) and making copies available to the press.

§ 701.1010 *Appeals*—(a) *Continental United States.* Any producer may, within 15 days after notice thereof is forwarded to or made available to him, request the county committee in writing to reconsider its recommendation or determination in any matter affecting the right to or the amount of his payment with respect to the farm. The county committee shall notify him of its decision in writing within 15 days after receipt of written request for reconsideration. If the producer is dissatisfied with the decision of the county committee, he may, within 15 days after the decision is forwarded to or made available to him, appeal in writing to the State committee. The State committee shall notify him of its decision in writing within 30 days after the submission of the appeal. If he is dissatisfied with the decision of the State committee, he may, within 15 days after its decision is forwarded to or made available to him, request the Director, ACP Branch, to review the decision of the State committee.

Written notice of any decision rendered under this paragraph by the county or State committee shall be issued also to each other producer on the farm who may be adversely affected by the decision.

(b) *Insular area.* Any producer may, within 15 days after notice thereof is forwarded to or made available to him, request the State committee in writing to reconsider its recommendation or determination in any matter affecting the right to or the amount of his payment with respect to the farm. The State committee shall notify him of its decision in writing within 15 days after receipt of a written request for reconsideration. If the producer is dissatisfied with the decision of the State committee, he may, within 15 days after its decision is forwarded to or made available to him, request the Director, ACP Branch, to review the decision of the State committee.

Written notice of any decision rendered under this paragraph by the State committee shall be issued also to each other producer on the farm who may be adversely affected by the decision.

§ 701.1011 *State handbooks, bulletins, instructions, and forms.* The ACP Branch is authorized to make determinations and to prepare and issue State handbooks, bulletins, instructions, and forms required in administering the 1949 program. Copies of State handbooks, bulletins, instructions, and forms containing detailed information with respect to the 1949 program as it applies to specific States, counties, areas, and farms will be available in the office of the State committee (11 F. R. 177A-285) and the office of the county committee. Producers wishing to participate in the program should obtain from the State committee or county committee all information needed in order to comply with all provisions of the program.

§ 701.1012 *Definitions.* For the purposes of the 1949 program:

(a) "Secretary" means the Secretary of Agriculture of the United States.

(b) "Director" means the Director of the Agricultural Conservation Programs Branch, Production and Marketing Administration.

(c) "Insular Area" means Alaska, Hawaii, Puerto Rico, and the Virgin Islands.

(d) "State" means any one of the Continental United States, Alaska, Hawaii, Puerto Rico, or the Virgin Islands.

(e) "State committee" means, in the Continental United States, the group of persons designated within any State to assist in the administration of the agricultural conservation program in that State; and, in Alaska, Hawaii, Puerto Rico, and the Virgin Islands, the person or persons in charge of the principal office (State office) for each such area.

(f) "Technical committee" means the group of agricultural technicians selected by the State committee to assist in the selection and development of conservation practices for the agricultural conservation program and to advise generally regarding the agricultural conservation program for the State.

(g) "County" means parish or county, respectively, in the Continental United States, and means State, as defined above, insofar as Alaska, Hawaii, Puerto Rico, and the Virgin Islands is concerned.

(h) "County committee" means, in the Continental United States, the group of persons elected within any county to assist in the administration of the agricultural conservation program in that county; and, in Alaska, Hawaii, Puerto Rico, and the Virgin Islands, the person or persons in charge of the principal office (State office) for each such area.

(i) "Person" means an individual, partnership, association, corporation, estate, or trust, or other business enterprise or other legal entity, and, wherever applicable, a State, a political subdivision of a State, or any agency thereof.

(j) "Producer" means any person who, as landlord, tenant, or sharecropper, participates in the operation of a farm.

(k) "Farm" means all adjacent or nearby farm or range land under the same ownership which is operated by one person, including also:

(1) Any other adjacent or nearby farm or range land which the county committee, in accordance with instructions issued by the ACP Branch determines is operated by the same person as part of the same unit in producing range livestock or with respect to the rotation of crops, and with workstock, farm machinery, and labor substantially separate from that for any other land; and

(2) Any field-rented tract (whether operated by the same or another person) which, together with any other land included in the farm, constitutes a unit with respect to the rotation of crops.

A farm shall be regarded as located in the county in which the principal dwelling is situated, or, if there is no dwelling thereon, it shall be regarded as located in the county in which the major portion of the farm is located.

§ 701.1013 *Authority, availability of funds, and applicability*—(a) *Authority.* The program is approved pursuant to the authority vested in the Secretary of Agriculture under sections 7 to 17, inclusive, of the Soil Conservation and Domestic Allotment Act, as amended (49 Stat. 1148, 16 U. S. C. 590g-590q)

(b) *Availability of funds.* The provisions of the 1949 program are necessarily subject to such legislation as the Congress of the United States may hereafter enact; the making of the payments herein provided is contingent upon such appropriation as the Congress may hereafter provide for such purpose; and the amounts of such payments will necessarily be within the limits finally determined by such appropriation.

The funds provided for the 1949 program will not be available for the payment of applications filed in the county office after December 31, 1950.

(c) *Applicability.* The provisions of the 1949 program contained herein are not applicable to (1) any department or bureau of the United States Government or any corporation wholly owned by the United States; and (2) grazing lands owned by the United States which were acquired or reserved for conservation purposes, or which are to be retained permanently under Government ownership, including, but not limited to, grazing lands administered by the Forest Service or the Soil Conservation Service of the United States Department of Agriculture, or by the Bureau of Land Management (including lands administered under the Taylor Grazing Act) or the Fish and Wildlife Service of the United States Department of the Interior.

The program is applicable to (1) privately owned lands; (2) lands owned by a State or political subdivision or agency thereof; (3) lands owned by corporations which are partly owned by the United States, such as Federal Land Banks and Production Credit Association; (4) lands temporarily owned by the United States or a corporation wholly owned by it, which were not acquired or reserved for conservation purposes, including lands administered by the Farmers Home Administration, the Reconstruction Finance Corporation, the Home Owners' Loan Corporation, the Federal Farm Mortgage Corporation, the Departments comprising the National Military Establishment, or by any other Government agency designated by the ACP Branch; (5) any cropland farmed by private persons which is owned by the United States or a corporation wholly owned by it; and (6) Indian lands, except that where grazing operations are carried out on Indian lands administered by the Department of the Interior, such lands are within the scope of the program only if covered by a written agreement approved by the Department of the Interior giving the operator an interest in the grazing and forage growing on the land and a right to occupy the land in order to carry out the grazing operations.

Done at Washington, D. C., this 7th day of July 1948. Witness my hand and the seal of the Department of Agriculture.

[SEAL] CHARLES F. BRANNAN,
Secretary of Agriculture.

[F. R. Doc. 48-6160; Filed, July 9, 1948; 8:52 a. m.]

Chapter IX—Production and Marketing Administration (Marketing Agreements and Orders)

[Plum Order 15]

PART 936—FRESH BARTLETT PEARS, PLUMS, AND ELBERTA PEACHES GROWN IN CALIFORNIA

REGULATION BY GRADES AND SIZES

§ 936.342 *Plum Order 15*—(a) *Findings.* (1) Pursuant to the marketing agreement, as amended, and Order No. 36, as amended (7 CFR, Cum. Supp., 936.1 et seq.) regulating the handling of fresh Bartlett pears, plums, and Elberta peaches grown in the State of California, effective under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended, and upon the basis of the recommendations of the Plum Commodity Committee, established under the aforesaid amended marketing agreement and order, and upon other available information, it is hereby found that the limitation of shipments of Late Tragedy plums, as hereinafter provided, will tend to effectuate the declared policy of the act.

(2) It is hereby further found that compliance with the preliminary notice and public rule-making procedure requirements and the 30-day effective date requirement of the Administrative Procedure Act (60 Stat. 237; 5 U. S. C. 1001 et seq.) is impracticable and contrary to the public interest in that the time intervening between the date when information upon which this section is based became available and the time when this section must become effective in order to effectuate the declared policy of the Agricultural Marketing Agreement Act of 1937, as amended, is insufficient for such compliance, and a reasonable time is permitted, under the circumstances, for preparation for such effective date.

(b) *Order* (1) During the period beginning at 12:01 a. m., California d. s. t., July 12, 1948, and ending at 12:01 a. m., California d. s. t., November 1, 1948, no shipper shall ship:

(i) Any package or container of Late Tragedy plums containing plums which do not meet the requirements of U. S. No. 1 grade (as specified for such grade in the United States Standards for plums and prunes (fresh) as amended, 12 F R. 2305; 13 F R. 2423) with a total tolerance of twenty-five (25) percent for defects not considered serious damage, in addition to the usual tolerances permitted in said United States Standards; or

(ii) Any package or container of Late Tragedy plums containing plums of a size smaller than a size that will pack a 5 x 5 standard pack, as specified in the aforesaid United States Standards, in a standard basket, as specified in paragraph numbered 1 of section 828.1 of the Agricultural Code of California. The aforesaid 5 x 5 standard pack is defined more specifically in subparagraph (2) of this paragraph.

(2) As used in this section, the aforesaid 5 x 5 standard pack is defined more specifically as follows: (i) at least thirty-five (35) percent, by count, of the total of such plums contained in any such pack measure not less than 1 9/16 inches in diameter, such diameter, as defined in the aforesaid United States Standards, being the shortest distance measured through the center of the plum at right angles to a straight line running from the stem to the blossom end; (ii) at least sixty (60) percent, by count, of the total of such plums contained in any such pack measure, as aforesaid, not less than 1 7/16 inches in diameter; and (iii) no plums contained in any such pack measure, as aforesaid, less than 1 5/16 inches in diameter.

(3) Each shipper, prior to making each shipment of Late Tragedy plums, shall, during the period set forth in subparagraph (1) of this paragraph, have the plums included in each such shipment inspected by a duly authorized representative of the Federal-State Inspection Service, heretofore designated by the Plum Commodity Committee and hereby approved; and each such shipper shall submit promptly, or cause to be submitted promptly, to the Plum Commodity Committee, Federal-State shipping point inspection certificates stating the grades and sizes of the Late Tragedy plums contained in each such lot or shipment: *Provided,* That, in case the following conditions exist in connection with any such shipment:

(i) A written request for inspection is made to the Federal-State Inspection Service not later than 5:00 p. m. of the day before the fruit will be available for inspection;

(ii) The shipper designates in such request the date and hours when the fruit will be available for inspection; and

(iii) The Federal-State Inspection Service furnishes the shipper with a signed statement that it is not practicable, under such conditions, for the Federal-State Inspection Service to make the inspection within the necessary time;

the shipper, by submitting or causing to be submitted promptly such signed statement to the Plum Commodity Committee, may make the particular shipment without such inspection, but such shipper shall comply with all grade and size regulations applicable to such shipment.

(4) Notwithstanding the provisions contained in subparagraphs (3) and (5) of this paragraph, any shipper may ship each day into or in either the San Francisco-Sacramento region or the Los Angeles region or through either of the aforesaid regions from a point in the State of California to another point in the State of California a single shipment of plums aggregating not more than 900 pounds, net weight, of Late Tragedy plums and of all other varieties of plums with respect to which any grade or size regulation, issued pursuant to the amended marketing agreement and order, is in effect, without having the Late Tragedy plums included in such shipment inspected by the aforesaid Federal-State Inspection Service: *Provided,* That such shipper shall comply with all grade and size regulations applicable to the shipment of such Late Tragedy plums,. and: *Provided, further,* That, such shipper submits or causes to be submitted promptly to the Plum Commodity Committee a report, with respect to each such shipment, setting forth the quantity of the Late Tragedy plums so shipped.

(5) The determination (12 F R. 3059) in § 936.301 with respect to shipments of plums into, in, or through the San Francisco-Sacramento region and the Los Angeles region shall be applicable to this section.

(6) The terms "shipper," "ship," "shipping," and "shipment," shall have the same meaning as when used in the amended marketing agreement and order; the term "serious damage" shall have the same meaning as set forth in the aforesaid United States Standards;

and the terms "San Francisco-Sacramento region" and "Los Angeles region" shall have the same meaning as when used in § 936.301. (48 Stat. 31, as amended, 7 U. S. C. 601 et seq., 7 CFR, Cum. Supp., 936.1 et seq.)

Done at Washington, D. C., this 8th day of July 1948.

[SEAL] S. R. SMITH,
Director Fruit and Vegetable Branch, Production and Marketing Administration.

[F. R. Doc. 48-9194; Filed, July 9, 1948; 9:22 a. m.]

PART 936—FRESH BARTLETT PEARS, PLUMS, AND ELBERTA PEACHES GROWN IN CALIFORNIA

[Plum Order 16]

REGULATION BY GRADES AND SIZES

§ 936.343 *Plum Order 16*—(a) *Findings.* (1) Pursuant to the marketing agreement, as amended, and Order No. 36, as amended (7 CFR, Cum. Supp., 936.1 et seq.), regulating the handling of fresh Bartlett pears, plums, and Elberta peaches grown in the State of California, effective under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended, and upon the basis of the recommendations of the Plum Commodity Committee, established under the aforesaid amended marketing agreement and order, and upon other available information, it is hereby found that the limitation of shipments of Late Santa Rosa plums, as hereinafter provided, will tend to effectuate the declared policy of the act.

(2) It is hereby further found that compliance with the preliminary notice and public rule-making procedure requirements and the 30-day effective date requirement of the Administrative Procedure Act (60 Stat. 237; 5 U. S. C. 1001 et seq.) is impracticable and contrary to the public interest in that the time intervening between the date when information upon which this section is based became available and the time when this section must become effective in order to effectuate the declared policy of the Agricultural Marketing Agreement Act of 1937, as amended, is insufficient for such compliance, and a reasonable time is permitted, under the circumstances, for preparation of such effective date.

(b) *Order* (1) During the period beginning at 12:01 a. m., California d. s. t., July 12, 1948, and ending at 12:01 a. m., California d. s. t., November 1, 1948, no shipper shall ship:

(i) Any package or container of Late Santa Rosa plums containing plums which do not meet the requirements of U. S. No. 1 grade (as specified for such grade in the United States Standards for plums and prunes (fresh) as amended, 12 F. R. 2305; 13 F. R. 2423) with a total tolerance of twenty-five (25) percent for defects not considered serious damage, in addition to the usual tolerances permitted in said United States Standards; or

(ii) Any package or container of Late Santa Rosa plums containing plums of a size smaller than a size that will pack a 5 x 5 standard pack, as specified in the aforesaid United States Standards, in a standard basket, as specified in paragraph numbered 1 of section 828.1 of the Agricultural Code of California. The aforesaid 5 x 5 standard pack is defined more specifically in subparagraph (2) of this paragraph.

(2) As used in this section, the aforesaid 5 x 5 standard pack is defined more specifically as follows: (i) At least thirty-five (35) percent, by count, of the total of such plums contained in any such pack measure not less than 1$^{9}/_{10}$ inches in diameter, such diameter, as defined in the aforesaid United States Standards, being the shortest distance measured through the center of the plum at right angles to a straight line running from the stem to the blossom end; (ii) at least sixty (60) percent, by count, of the total of such plums contained in any such pack measure, as aforesaid, not less than 1$^{7}/_{10}$ inches in diameter; and (iii) no plums contained in any such pack measure, as aforesaid, less than 1$^{5}/_{10}$ inches in diameter.

(3) Each shipper, prior to making each shipment of Late Santa Rosa plums, shall, during the period set forth in subparagraph (1) of this paragraph, have the plums included in each such shipment inspected by a duly authorized representative of the Federal-State Inspection Service, heretofore designated by the Plum Commodity Committee and hereby approved; and each such shipper shall submit promptly, or cause to be submitted promptly, to the Plum Commodity Committee, Federal-State shipping point inspection certificates stating the grades and sizes of the Late Santa Rosa plums contained in each such lot or shipment: *Provided*, That, in case the following conditions exist in connection with any such shipment:

(i) A written request for inspection is made to the Federal-State Inspection Service not later than 5:00 p. m. of the day before the fruit will be available for inspection;

(ii) The shipper designates in such request the date and hours when the fruit will be available for inspection; and

(iii) The Federal-State Inspection Service furnishes the shipper with a signed statement that it is not practicable, under such conditions, for the Federal-State Inspection Service to make the inspection within the necessary time;

the shipper, by submitting or causing to be submitted promptly such signed statement to the Plum Commodity Committee, may make the particular shipment without such inspection, but such shipper shall comply with all grade and size regulations applicable to such shipment.

(4) Notwithstanding the provisions contained in subparagraphs (3) and (5) of this paragraph, any shipper may ship each day into or in either the San Francisco-Sacramento region or the Los Angeles region or through either of the aforesaid regions from a point in the State of California to another point in the State of California a single shipment of plums aggregating not more than 900 pounds, net weight, of Late Santa Rosa plums and of all other varieties of plums with respect to which any grade or size regulation, issued pursuant to the amended marketing agreement and order, is in effect, without having the Late Santa Rosa plums included in such shipment inspected by the aforesaid Federal-State Inspection Service: *Provided*, That such shipper shall comply with all grade and size regulations applicable to the shipment of such Late Santa Rosa plums, and: *Provided, further*, That, such shipper submits or causes to be submitted promptly to the Plum Commodity Comimttee a report, with respect to each such shipment, setting forth the quantity of the Late Santa Rosa plums so shipped.

(5) The determination (12 F. R. 3059) in § 936.301 with respect to shipments of plums into, in, or through the San Francisco-Sacramento region and the Los Angeles region shall be applicable to this section.

(6) The terms "shipper," "ship," "shipping," and "shipment," shall have the same meaning as when used in the amended marketing agreement and order; the term "serious damage" shall have the same meaning as set forth in the aforesaid United States Standards; and the terms "San Francisco-Sacramento region" and "Los Angeles region" shall have the same meaning as when used in § 936.301. (48 Stat. 31, as amended, 7 U. S. C. 601 et seq., 7 CFR, Cum. Supp., 936.1 et seq.).

Done at Washington, D. C., this 8th day of July 1948.

[SEAL] S. R. SMITH,
Director, Fruit and Vegetable Branch, Production and Marketing Administration.

[F. R. Doc. 48-6193; Filed, July 9, 1948; 9:22 a. m.]

[Plum Order 17]

PART 936—FRESH BARTLETT PEARS, PLUMS, AND ELBERTA PEACHES GROWN IN CALIFORNIA

REGULATION BY GRADES AND SIZES

§ 936.344 *Plum Order 17*—(a) *Findings.* (1) Pursuant to the marketing agreement, as amended, and Order No. 36, as amended (7 CFR, Cum. Supp., 936.1 et seq.) regulating the handling of fresh Bartlett pears, plums, and Elberta peaches grown in the State of California, effective under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended, and upon the basis of the recommendations of the Plum Commodity Committee, established under the aforesaid amended marketing agreement and order, and upon other available information, it is hereby found that the limitation of shipments of Sharkey plums, as hereinafter provided, will tend to effectuate the declared policy of the act.

(2) It is hereby further found that compliance with the preliminary notice and public rule-making procedure requirements and the 30-day effective date

requirement of the Administrative Procedure Act (60 Stat. 237; 5 U. S. C. 1001 et seq.) is impracticable and contrary to the public interest in that the time intervening between the date when information upon which this section is based became available and the time when this section must become effective in order to effectuate the declared policy of the Agricultural Marketing Agreement Act of 1937, as amended, is insufficient for such compliance, and a reasonable time is permitted, under the circumstances, for preparation for such effective date.

(b) *Order* (1) During the period beginning at 12:01 a. m., California d. s. t., July 12, 1948, and ending at 12:01 a. m., California d. s. t., November 1, 1948, no shipper shall ship:

(i) Any package or container of Sharkey plums containing plums which do not meet the requirements of U. S. No. 1 grade (as specified for such grade in the United States Standards for plums and prunes (fresh) as amended, 12 F. R. 2305; 13 F R. 2423) with a total tolerance of ten (10) percent for defects not considered serious damage, in addition to the usual tolerances permitted in said United States Standards; or

(ii) Any package or container of Sharkey plums containing plums of a size smaller than a size that will pack a 4 x 5 standard pack, as specified in the aforesaid United States Standards, in a standard basket, as specified in paragraph numbered 1 of section 828.1 of the Agricultural Code of California. The aforesaid 4 x 5 standard pack is defined more specifically in subparagraph (2) of this paragraph.

(2) As used in this section, the aforesaid 4 x 5 standard pack is defined more specifically as follows: (i) At least thirty-five (35) percent, by count, of the total of such plums contained in any such pack measure not less than 1 11/16 inches in diameter, such diameter, as defined in the aforesaid United States Standards, being the shortest distance measured through the center of the plum at right angles to a straight line running from the stem to the blossom end; (ii) at least sixty (60) percent, by count, of the total of such plums contained in any such pack measure, as aforesaid, not less than 1 9/16 inches in diameter; and (iii) no plums contained in any such pack measure, as aforesaid, less than 1 7/16 inches in diameter.

(3) Each shipper, prior to making each shipment of Sharkey plums, shall, during the period set forth in subparagraph (1) of this paragraph, have the plums included in each such shipment inspected by a duly authorized representative of the Federal-State Inspection Service, heretofore designated by the Plum Commodity Committee and hereby approved; and each such shipper shall submit promptly, or cause to be submitted promptly, to the Plum Commodity Committee, Federal-State shipping point inspection certificates stating the grades and sizes of the Sharkey plums contained in each such lot or shipment: *Provided,* That, in case the following conditions exist in connection with any such shipment:

(i) A written request for inspection is made to the Federal-State Inspection Service not later than 5:00 p. m. of the day before the fruit will be available for inspection;

(ii) The shipper designates in such request the date and hours when the fruit will be available for inspection; and

(iii) The Federal-State Inspection Service furnishes the shipper with a signed statement that it is not practicable, under such conditions, for the Federal-State Inspection Service to make the inspection within the necessary time;

the shipper, by submitting or causing to be submitted promptly such signed statement to the Plum Commodity Committee, may make the particular shipment without such inspection, but such shipper shall comply with all grade and size regulations applicable to such shipment.

(4) Notwithstanding the provisions contained in subparagraphs (3) and (5) of this paragraph, any shipper may ship each day into or in either the San Francisco-Sacramento region or the Los Angeles region or through either of the aforesaid regions from a point in the State of California to another point in the State of California a single shipment of plums aggregating not more than 900 pounds, net weight, of Sharkey plums and of all other varieties of plums with respect to which any grade or size regulation, issued pursuant to the amended marketing agreement and order, is in effect, without having the Sharkey plums included in such shipment inspected by the aforesaid Federal-State Inspection Service: *Provided,* That such shipper shall comply with all grade and size regulations applicable to the shipment of such Sharkey plums, and: *Provided, further* That such shipper submits or causes to be submitted promptly to the Plum Commodity Committee a report, with respect to each such shipment, setting forth the quantity of the Sharkey plums so shipped.

(5) The determination (12 F. R. 3059) in § 936.301 with respect to shipments of plums into, in, or through the San Francisco-Sacramento region and the Los Angeles region shall be applicable to this section.

(6) The terms "shipper," "ship," "shipping," and "shipment," shall have the same meaning as when used in the amended marketing agreement and order; the term "serious damage" shall have the same meaning as set forth in the aforesaid United States Standards; and the terms "San Francisco-Sacramento region" and "Los Angeles region" shall have the same meaning as when used in § 936.301. (48 Stat. 31, as amended, 7 U. S. C. 601 et seq., 7 CFR, Cum. Supp., 936.1 et seq.)

Done at Washington, D. C., this 8th day of July 1948.

[SEAL] S. R. SMITH,
Director, Fruit and Vegetable Branch, Production and Marketing Administration.

[F. R. Doc. 48-6192; Filed, July 9, 1948; 9:22 a. m.]

[Lemon Reg. 282]

PART 953—LEMONS GROWN IN CALIFORNIA AND ARIZONA

LIMITATION OF SHIPMENTS

§ 953.389 *Lemon Regulation 282*—(a) *Findings.* (1) Pursuant to the marketing agreement, as amended, and Order No. 53, as amended (7 CFR, Cum. Supp., 953.1 et seq., 13 F. R. 766), regulating the handling of lemons grown in the State of California or in the State of Arizona, effective under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended, and upon the basis of the recommendation and information submitted by the Lemon Administrative Committee, established under the said amended marketing agreement and order, and upon other available information, it is hereby found that the limitation of the quantity of such lemons which may be handled, as hereinafter provided, will tend to effectuate the declared policy of the act.

(2) It is hereby further found that compliance with the preliminary notice and public rule-making procedure requirements and the 30-day effective date requirement of the Administrative Procedure Act (60 Stat. 237; 5 U. S. C. 1001 et seq.) is impracticable, unnecessary, and contrary to the public interest in that the time intervening between the date when information upon which this section is based became available and the time when this section must become effective in order to effectuate the declared policy of the Agricultural Marketing Agreement Act of 1937, as amended, is insufficient for such compliance, and a reasonable time is permitted, under the circumstances, for preparation for such effective date.

(b) *Order* (1) The quantity of lemons grown in the State of California or in the State of Arizona which may be handled during the period beginning at 12:01 a. m., P. s. t., July 11, 1948, and ending at 12:01 a. m., P. s. t., July 18, 1948, is hereby fixed as follows:

(i) District 1. 725 carloads.

(ii) District 2: Unlimited movement.

(2) The prorate base of each handler who has made application therefor, as provided in the said amended marketing agreement and order, is hereby fixed in accordance with the prorate base schedule which is attached to Lemon Regulation 281 (13 F R. 3720) and made a part hereof by this reference.

(3) As used in this section, "handled," "handler," "carloads," "prorate base," "District 1," and "District 2" shall have the same meaning as is given to each such term in the said amended marketing agreement and order. (48 Stat. 31, as amended; 7 U. S. C. 601 et seq.)

Done at Washington, D. C., this 8th day of July 1948.

[SEAL] S. R. SMITH,
Director, Fruit and Vegetable Branch, Production and Marketing Administration.

[F. R. Doc. 48-6196; Filed, July 9, 1948; 9:23 a. m.]

[Orange Reg. 238]

PART 966—ORANGES GROWN IN CALIFORNIA AND ARIZONA

LIMITATION OF SHIPMENTS

§ 966.384 *Orange Regulation 238*—(a) *Findings.* (1) Pursuant to the provisions of Order No. 66 (7 CFR, Cum. Supp., 966.1 et seq.) regulating the handling of oranges grown in the State of California or in the State of Arizona, effective under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended, and upon the basis of the recommendation and information submitted by the Orange Administrative Committee, established under the said order, and upon other available information, it is hereby found that the limitation of the quantity of such oranges which may be handled, as hereinafter provided, will tend to effectuate the declared policy of the act.

(2) It is hereby further found that compliance with the preliminary notice and public rule-making procedure requirements and the 30-day effective date requirement of the Administrative Procedure Act (60 Stat. 237; 5 U. S. C. 1001 et seq.) is impracticable, unnecessary, and contrary to the public interest in that the time intervening between the date when information upon which this section is based became available and the time when this section must become effective in order to effectuate the declared policy of the Agricultural Marketing Agreement Act of 1937, as amended, is insufficient for such compliance, and a reasonable time is permitted, under the circumstances, for preparation for such effective date.

(b) *Order.* (1) The quantity of oranges grown in the State of California or in the State of Arizona which may be handled during the period beginning at 12:01 a. m., P. s. t., July 11, 1948, and ending at 12:01 a. m., P. s. t., July 18, 1948, is hereby fixed as follows:

(i) *Valencia oranges.* (*a*) Prorate District No. 1, unlimited movement; (*b*) Prorate District No. 2, 1,300 carloads; (*c*) Prorate District No. 3, unlimited movement.

(ii) *Oranges other than Valencia oranges.* Prorate Districts Nos. 1, 2, and 3, no movement.

(2) The prorate base of each handler who has made application therefor, as provided in the said order, is hereby fixed in accordance with the prorate base schedule which is attached hereto and made a part hereof by this reference.

(3) As used in this section, "handled," "handler," "carloads," and "prorate base" shall have the same meaning as is given to each such term in the said order; and "Prorate District No. 1," "Prorate District No. 2," and "Prorate District No. 3" shall have the same meaning as is given to each such term in § 966.107 of the rules and regulations (11 F. R. 10258) issued pursuant to said order. (48 Stat. 31, as amended; 7 U. S. C. 601 et seq.)

Done at Washington, D. C., this 8th day of July 1948.

[SEAL] S. R. SMITH,
Director Fruit and Vegetable Branch, Production and Marketing Administration.

PRORATE BASE SCHEDULE

[12:01 a. m. July 11, 1948, to 12:01 a. m. July 18, 1948]

VALENCIA ORANGES

Prorate District No. 2

Handler	Prorate base (percent)
Total	100.0000
A. F. G. Alta Loma	.0768
A. F. G. Corona	.1535
A. F. G. Fullerton	7431
A. F. G. Orange	.4806
A. F. G. Riverside	.1132
A. F. G. San Juan Capistrano	.6897
A. F. G. Santa Paula	.6317
Hazeltine Packing Company	.4100
Placentia Pioneer Valencia Growers Association	.6353
Signal Fruit Association	.1371
Azusa Citrus Association	.3767
Covina Valley Orange Co	.0462
Damerel-Allison Co	.8532
Glendora Mutual Orange Association	.3953
Irwindale Citrus Association	.3037
Puente Mutual Citrus Association	.2152
Valencia Heights Orchard Association	4567
Covina Citrus Association	1.1601
Covina Orange Growers Association	.6544
Glendora Citrus Association	.3777
Glendora Heights Orange and Lemon Growers Association	.0591
Gold Buckle Association	.5946
La Verne Orange Association	.6332
Anaheim Citrus Fruit Association	1.0430
Anaheim Valencia Orange Association	1.0086
Eadington Fruit Co., Inc	2.5991
Fullerton Mutual Orange Association	1.2513
La Habra Citrus Association	1.1147
Orange County Valencia Association	.9093
Orangethorpe Citrus Association	.8224
Placentia Coop. Orange Association	7549
Yorba Linda Citrus Association	.6562
Citrus Fruit Growers	.1458
Cucamonga Citrus Association	.2309
Etiwanda Citrus Fruit Association	.0377
Mountain View Fruit Association	.0191
Old Baldy Citrus Association	.1332
Rialto Heights Orange Growers	.0593
Upland Citrus Association	.3756
Upland Heights Orange Association	.1459
Consolidated Orange Growers	1.9312
Frances Citrus Association	1.2514
Garden Grove Citrus Association	1.4001
Goldenwest Citrus Association, The	1.5348
Irvine Valencia Growers	2.7327
Olive Heights Citrus Association	1.6381
Santa Ana-Tustin Mutual Citrus Association	1.0636
Santiago Orange Growers Association	4.2619
Tustin Hills Citrus Association	2.3771
Villa Park Orchards Association, The	1.6407
Bradford Brothers, Inc	7194
Placentia Mutual Orange Association	1.6329
Placentia Orange Growers Association	1.8020
Yorba Orange Growers Association	.5366
Call Ranch	.0753
Corona Citrus Association	.0163
Jameson Co	.0488
Orange Heights Orange Association	.3693
Crafton Orange Growers Association	.4235
E. Highlands Citrus Association	.0317
Fontana Citrus Association	.1204
Highland Fruit Growers Association	.0479
Redlands Heights Groves	.3175
Redlands Orangedale Association	.3380
Break & Sons, Allen	.0639
Bryn Mawr Fruit Growers Association	.2622

PRORATE BASE SCHEDULE—Continued

VALENCIA ORANGES—continued

Prorate District No. 2—Continued

Handler	Prorate base (percent)
Krinard Packing Co	0.3101
Mission Citrus Association	.1733
Redlands Coop. Fruit Association	.3714
Redlands Orange Growers Association	.2570
Redlands Select Groves	.3110
Rialto Citrus Association	.2316
Rialto Orange Co	.1600
Southern Citrus Association	.1539
United Citrus Growers	.1537
Zilen Citrus Co	.0716
Arlington Height Citrus Co	.1135
Brown Estate, L. V. W	.1579
Gavilan Citrus Association	.1703
Hemet Mutual Groves	.0375
Highgrove Fruit Association	.0643
McDermont Fruit Co	.2003
Monte Vista Citrus Association	.1940
National Orange Company	.0362
Riverside Heights Orange Growers Association	.0630
Sierra Vista Packing Association	.0610
Victoria Avenue Citrus Association	.2179
Claremont Citrus Association	.1793
College Heights Orange & Lemon Association	.2226
El Camino Citrus Association	.0366
Indian Hill Citrus Association	.2029
Pomona Fruit Growers Exchange	4214
Walnut Fruit Growers Association	.5775
West Ontario Citrus Association	4204
El Cajon Valley Citrus Association	.2923
Escondido Orange Association	2.6399
San Dimas Orange Growers Association	.5109
Andrews Brothers of California	.3599
Ball & Tweedy Association	.5441
Canoga Citrus Association	1.0845
North Whittier Heights Citrus Association	.9314
San Fernando Fruit Growers Association	.6823
San Fernando Heights Orange Association	1.0937
Sierra Madre-Lamanda Citrus Association	4950
Camarillo Citrus Association	1.6726
Fillmore Citrus Association	3.8416
Mupu Citrus Association	3.1701
Ojai Orange Association	1.0878
Piru Citrus Association	2.1227
Santa Paula Orange Association	1.2052
Tapo Citrus Association	1.1776
Ventura County Citrus Association	.0342
Limoneira Company	.6930
East Whittier Citrus Association	.3955
El Ranchito Citrus Association	1.0792
Murphy Ranch Company	.4740
Rivera Citrus Association	.4136
Whittier Citrus Association	7002
Whittier Select Citrus Association	4323
Anaheim Coop. Orange Association	1.1293
Bryn Mawr Mutual Orange Association	.1076
Chula Vista Mutual Orange Association	.1313
Escondido Coop. Citrus Association	.4183
Euclid Avenue Orange Association	.5003
Foothill Citrus Union, Inc	.0356
Fullerton Coop. Orange Association	.3131
Garden Grove Orange Coop., Inc	.6354
Golden Orange Groves, Inc	.2055
Highland Mutual Groves	.0326
Index Mutual Association	.2343
La Verne Coop. Citrus Association	1.3334
Mentone Heights Association	.0763
Olive Hillside Groves	.5532
Orange Coop. Citrus Association	.9325
Redlands Foothill Groves	.6127
Redlands Mutual Orange Association	.1359
Riverside Citrus Association	.0589
Ventura County Orange and Lemon Association	.9553
Whittier Mutual Orange and Lemon Association	.1322

PRORATE BASE SCHEDULE—Continued

VALENCIA ORANGES—continued

Prorate District No. 2—Continued

Handler	Prorate base (percent)
Babijuice Corp. of Calif	0.3180
Banks Fruit Co	.2384
Banks, L. M	.3910
Borden Fruit Co	.9231
California Associated Growers	.1811
California Fruit Distributors	0791
Cherokee Citrus Co., Inc	.1386
Chess Co., Meyer W	.2888
Escondido Avocado Growers	0205
Evans Brothers Packing Co	.1491
Gold Banner Association	.2897
Granada Hills Packing Co	0399
Granada Packing House	1.7780
Hill, Fred A	.0688
Inland Fruit Dealers	0596
Orange Belt Fruit Distributors	1.6991
Panno Fruit Co., Carlo	.0637
Paramount Citrus Association, Inc.	.6704
Placentia Orchard Co	4968
San Antonio Orchard Co	.3491
Snyder & Sons Co., W. A	.2863
Stephens, T. F	.2295
Torn Ranch	.0038
Wall, E. T	.1090
Webb Packing Co	0430
Western Fruit Growers, Inc., Redlands	6923

[F. R. Doc. 48-6195; Filed, July 9, 1948; 9:23 a. m.]

TITLE 8—ALIENS AND NATIONALITY

Chapter I—Immigration and Naturalization Service, Department of Justice

Subchapter D—Nationality Regulations

PART 333—SPECIAL CLASSES OF PERSONS WHO MAY BE NATURALIZED: VETERANS OF THE UNITED STATES ARMED FORCES WHO SERVED DURING WORLD WAR I OR WORLD WAR II

PART 338—SPECIAL CLASSES OF PERSONS WHO MAY BE NATURALIZED: MEMBERS OR VETERANS OF THE UNITED STATES ARMED FORCES DURING THE SECOND WORLD WAR WITHIN THE JURISDICTION OF A NATURALIZATION COURT

PART 339—SPECIAL CLASSES OF PERSONS WHO MAY BE NATURALIZED: MEMBERS OF THE UNITED STATES ARMED FORCES DURING THE SECOND WORLD WAR NOT WITHIN THE JURISDICTION OF ANY NATURALIZATION COURT

PART 361—OFFICIAL FORMS

PART 363—CERTIFICATE OF ARRIVAL

NATURALIZATION OF WAR VETERANS

JUNE 11, 1948.

1. Title 8, Chapter I, Code of Federal Regulations, is hereby amended by revoking Parts 338 and 339 and by adding Part 333 as follows:

Sec.
333.1 Persons eligible.
333.2 Exemptions and fees.
333.3 Verification of the petition for naturalization.
333.4 Proof of service in the armed forces; final hearing.
333.5 Procedure.

AUTHORITY: §§ 333.1 to 333.5, inclusive, issued under sec. 327, 54 Stat. 1150, sec. 37 (a), 54 Stat. 675; 8 U. S. C. 727, 458; 8 CFR 90.1, 12 F. R. 4781. §§ 333.1 to 333.5, inclusive, interpret and apply Public Law 567, 80th Congress, approved June 1, 1948.

§ 333.1 *Persons eligible.* Any person not a citizen of the United States, regardless of age, who served honorably in an active-duty status in the military or naval forces of the United States either during World War I or during a period beginning September 1, 1939, and ending December 31, 1946, and who, if separated from such service, was separated under honorable conditions may be naturalized as provided in section 324A of the Nationality Act of 1940. For the purposes of this part, World War I shall be deemed to have commenced on April 6, 1917, and to have ended on November 11, 1918. The provisions of section 324A of the Nationality Act of 1940 shall not apply to a person who has been separated from such service on account of alienage or who was a conscientious objector who performed no military or naval duty whatever or refused to wear the uniform.

§ 333.2 *Exemptions and fees.* A person described in § 333.1 may file a petition for naturalization in any naturalization court, without regard to his place of residence, and no period of residence within the United States or any State shall be required. If the person shall have been in the United States, the Panama Canal Zone, or an outlying possession (excluding the Philippine Islands) at the time of his enlistment or induction, he shall not be required to prove lawful admission to the United States for permanent residence. If the person shall have been outside the United States, an outlying possession, or the Panama Canal Zone or shall have been in the Philippine Islands, at the time of his enlistment or induction, he shall not be eligible to be naturalized under the provisions of § 333.1 unless he has been lawfully admitted to the United States for permanent residence subsequent to enlistment or induction. No declaration of intention and no certificate of arrival shall be required to be filed with the petition. The provisions of sections 303 and 326 of the Nationality Act of 1940, relating respectively to racial restrictions upon naturalization and to the naturalization of alien enemies, shall not apply to petitions for naturalization filed under § 333.1. A petitioner for naturalization under § 333.1 shall pay such fees as are required by section 342 of the Nationality Act of 1940.

§ 333.3 *Verification of the petition for naturalization.* A petition for naturalization filed in accordance with § 333.1 shall be verified, but for no specified period of time, by at least two credible witnesses, citizens of the United States, as provided in § 370.4 of this chapter, and the verifying witnesses shall also testify at the final hearing unless excused therefrom as provided in § 373.2 of this chapter.

§ 333.4 *Proof of service in the armed forces; final hearing.* If the petitioner is not serving in the military or naval forces of the United States at the time he files a petition under this part, the service shall be proved by a duly authenticated certification from the executive department under which he served, which shall state whether the petitioner served honorably in an active-duty status during the period of time covered by the certification and whether he was separated from such service under honorable conditions. If the petitioner is serving in the military or naval forces of the United States, the service specified in § 333.1 may be proved by affidavits forming part of the petition, of at least two citizens of the United States, members of the military or naval forces of a noncommissioned or warrant officer grade or higher, who may be the same two witnesses described in § 333.3, or by a duly authenticated certification as described in this section. If the petitioner and the verifying witnesses described in § 333.3 have appeared before and been examined by a representative of the Immigration and Naturalization Service prior to the filing of the petition, the petition may be heard immediately by the naturalization court.

§ 333.5 *Procedure.* An application to file a petition for naturalization under § 333.1 shall be made on Form N-400 and shall be submitted to the immigration and naturalization office prescribed in § 60.30 (a) of this chapter. The petition for naturalization shall be filed on Form N-418. Where a duly authenticated certification of the service of the petitioner in the military or naval forces of the United States is required, such authenticated certification shall be requested on Form N-426, in triplicate, by the applicant through the appropriate field office at the time the preliminary application on Form N-400 is submitted.

2. Title 8, Chapter I, Code of Federal Regulations, is hereby further amended by changing § 361.7, *Amendment of forms for petitions for naturalization,* in the following respects, so that there will be eliminated from that section those provisions pertaining to petition Forms N-410, N-411, and N-412:

a. By deleting from the introductory sentence the language "or, where the petition is filed under § 339.1 of this chapter, by the designated representative of the Immigration and Naturalization Service,"

b. By deleting subparagraphs (3) and (4) of paragraph (b)

c. By revoking paragraphs (e), (f), and (g)

d. By changing the designation of paragraph (h) (13 F R. 1994) to paragraph (e)

3. Title 8, Chapter I, Code of Federal Regulations, is hereby further amended by deleting from § 363.1, *Official form of certificate of arrival; contents; by whom issued,* the following language: ", except that the certificate of arrival required under § 339.2 (b) of this chapter may be in the form of the certification by the designated representative of the Immigration and Naturalization Service as it appears in the last paragraph of the Affidavit of Witnesses and Certificate of Petitioner's Service on Form N-411"

This order shall become effective on the date of its publication in the FEDERAL REGISTER. Compliance with the provisions of section 4 (a) of the Administrative Procedure Act (60 Stat.

238; 5 U. S. C., Sup., 1003) as to notice of proposed rule making is found to be impracticable because Public Law 567, 80th Congress, which provides for the naturalizations dealt with in the rules stated above, became effective on June 1, 1948, and the due and timely execution of the function of the Immigration and Naturalization Service under that statute would be impeded by notice of proposed rule making. It is further found that the provisions of section 4 (c) of the Administrative Procedure Act providing for delayed effective date are inapplicable to the foregoing rules for the same reasons and for the additional reason that these rules grant and recognize exemptions and relieve restrictions imposed upon the naturalization of alien veterans prior to the approval of Public Law 567 and the issuance of these rules.

WATSON B. MILLER,
Commissioner of Immigration and Naturalization.

Approved: June 30, 1948.

TOM C. CLARK,
Attorney General.

[F. R. Doc. 48-6152; Filed, July 9, 1948; 8:48 a. m.]

TITLE 9—ANIMALS AND ANIMAL PRODUCTS

Chapter II—Production and Marketing Administration (Livestock Branch)

PART 202—RULES OF PRACTICE GOVERNING PROCEEDINGS UNDER THE PACKERS AND STOCKYARDS ACT

PROCEDURE FOR DISPOSITION OF PETITIONS

By virtue of the authority vested in the Secretary of Agriculture by the Packers and Stockyards Act, 1921 (42 Stat. 159; 7 U. S. C. § 181 et seq.) as amended, § 202.37 (b) of the rules of practice governing proceedings under the Packers and Stockyards Act, 1921, appearing in Title 9, Chapter II, Part 202 of the Code of Federal Regulations, is amended to read as follows:

§ 202.37 *Applications for reopening hearings; for rehearings or reargument of proceedings, or for reconsideration of orders, or for modification or vacation of orders.* * * *

(b) *Procedure for disposition of petitions.* The provisions of paragraph (b) of § 202.21 shall be applicable in rate proceedings: *Provided, however* That answers to petitions, notice of which is published in the FEDERAL REGISTER, may be filed with the hearing clerk at any time within 20 days after the date of publication of notice of such petitions in the FEDERAL REGISTER.

(42 Stat. 159, as amended; 7 U. S. C. 181 et seq.)

Done at Washington, D. C., this 7th day of July 1948. Witness my hand and the seal of the Department of Agriculture.

[SEAL] CHARLES F. BRANNAN,
Secretary.

[F. R. Doc. 48-6159; Filed, July 9, 1948; 8:52 a. m.]

TITLE 14—CIVIL AVIATION

Chapter I—Civil Aeronautics Board

[Supplement 2]

PART 03—AIRPLANE AIRWORTHINESS; NORMAL, UTILITY, ACROBATIC, AND RESTRICTED PURPOSE CATEGORIES

Section 03.06 provides that materials, parts, processes, and appliances shall be approved upon a basis and in a manner found necessary by the Administrator to implement the pertinent provisions of the Civil Air Regulations; that the Administrator may adopt and publish such specifications as he finds necessary to administer this regulation, and shall incorporate therein such portions of the aviation industry, Federal, and military specifications respecting such materials, parts, processes, and appliances as he finds appropriate; and that any material, part, process, or appliance shall be deemed to have met the requirements for approval when it meets the pertinent specifications adopted by the Administrator, and the manufacturer so certifies in a manner prescribed by the Administrator.

Acting pursuant to the foregoing authority, the following specifications are hereby adopted. They are made effective on the dates indicated, in order to promote safety of the flying public. Compliance with the notice, procedures, and effective date provisions of section 4 of the Administrative Procedure Act (60 Stat. 237, 238; 5 U. S. C. 1001, 1003) would be impracticable, unnecessary, and contrary to the public interest, and therefore is not required.

§ 03.06 *Approval of materials, parts, processes, and appliances.* * * *

(CAA Specifications)

Specifications by the Administrator of Civil Aeronautics applicable to § 03.06 appear under § 04a.07, *infra.*

(Secs. 205 (a) 601, 603, 52 Stat. 984, 1007, 1009; 54 Stat. 1231, 1233–1235; 49 U. S. C. 425 (a) 551, 553)

D. W. RENTZEL,
Administrator of Civil Aeronautics.

[F. R. Doc. 48-6000; Filed, July 9, 1948; 9:00 a. m.]

[Supp. 1]

PART 04a—AIRPLANE AIRWORTHINESS

Section 04a.07 provides that materials, parts, processes, and appliances shall be approved upon a basis and in a manner found necessary by the Administrator to implement the pertinent provisions of the Civil Air Regulations; that the Administrator may adopt and publish such specifications as he finds necessary to administer this regulation, and shall incorporate therein such portions of the aviation industry, Federal, and military specifications respecting such materials, parts, processes, and appliances as he finds appropriate; and that any material, part, process, or appliance shall be deemed to have met the requirements for approval when it meets the pertinent specifications adopted by the Administrator, and the manufacturer so certifies in a manner prescribed by the Administrator.

Acting pursuant to the foregoing authority, the following specifications are hereby adopted. They are made effective on the dates indicated hereinafter, in order to promote safety of the flying public. Compliance with the notice, procedures, and effective date provisions of Section 4 of the Administrative Procedure Act (60 Stat. 237, 238; 5 U. S. C. 1001, 1003) would be impracticable, unnecessary, and contrary to the public interest, and therefore is not required.

§ 04a.07 *Approval of materials, parts, processes and appliances.* * * *

CAA Specifications

[Technical Standard Order C1a, as Amended June 15, 1948]

SMOKE DETECTORS

Introduction. Smoke detectors are in the class of aircraft components which the Administrator of Civil Aeronautics is authorized to approve in accordance with Parts 04a and 04b of the Civil Air Regulations.

This Technical Standard Order is intended to serve as a criterion by which the product manufacturer can obtain Civil Aeronautics Administration approval of his smoke detector.

In the establishment of this Technical Standard Order, consideration has been given to existing Government and industry standards for smoke detectors for the purpose of adopting the performance requirements of one of the recognized aeronautical standards as the minimum safety requirements for smoke detectors which are intended for use in civil aircraft. The specification of the Society of Automotive Engineers for smoke detectors contains such requirements.

DIRECTIVE

Provision. Pursuant to §§ 04a.062, 04a.07, 04a.500, 04b.00, 04b.05, and 04b.38251 of the Civil Air Regulations, which authorize the Administrator to approve aircraft equipment, the performance requirements for smoke detectors as set forth in SAE Specification AS-400, Smoke Detectors, dated July 1, 1947,[1] stated below, with the exceptions hereinafter noted, are established as the minimum safety requirements for smoke detectors which are intended for use in civil aircraft:

1. *Purpose.* To specify minimum requirements for smoke detection instruments for use in aircraft, the operation of which may subject the instrument to environmental conditions specified in section 3.4.

2. *Scope.* This specification covers two basic types as follows:

Type I. Carbon monoxide.
Type II. Photoelectric cell.

3. *General requirements.*

3.1. *Material and workmanship.*

3.1.1. *Material.* Materials shall be of a quality which experience or tests have demonstrated to be suitable and dependable for use in aircraft instruments.

3.1.2. *Workmanship.* Workmanship shall be consistent with high-grade aircraft instrument manufacturing practice.

3.2. *Radio interference.* The instrument shall not be the source of objectionable interference, under operating conditions at any frequencies used on aircraft, either by radiation or feed-back, in radio sets installed in the same aircraft as the instrument.

3.3. *Identification.* The following information shall be legibly and permanently marked on the instrument or attached thereto:

(a) Name of instrument (smoke detector).
(b) SAE Spec. AS-400.
(c) Rating (electrical, vacuum, etc.).

[1] Copies may be obtained from the Society of Automotive Engineers, 29 West Thirty-ninth Street, New York, N. Y.

(d) Manufacturer's part number.
(e) Manufacturer's serial number or date of manufacture.
(f) Manufacturer's name and/or trademark.

3.4. *Environmental conditions.* The following conditions have been established as design criteria only. Tests shall be conducted as specified in sections 5, 6, and 7.

3.4.1. *Temperature.* When mounted in accordance with the instrument manufacturer's instructions, the instrument shall function over the range of ambient temperature of −55° C. to 60° C. and shall not be adversely affected by exposure to temperatures in the range −65° C. and to 70° C.

3.4.2. *Humidity.* The instrument shall function and not be adversely affected when exposed to a relative humidity of up to and including 95% at a temperature of approximately 32° C.

3.4.3. *Altitude.* The instrument shall function and not be adversely affected when subjected to a pressure and temperature range equivalent to −1,000 feet to +40,000 feet standard altitude.

3.4.4. *Vibration.* When mounted in accordance with the instrument manufacturer's instructions, the units shall function and shall not be adversely affected when subjected to the following vibrations:

Type of instrument mounting	Cycles per minute [1]	Amplitude [1]	Max. acceleration
		Inch	
Shock mounted panel instruments	500–3000	0.005	0.8 g
Unshock mounted panel instruments	500–3000	.010	1.3 g
Airframe structure mounted instruments	500–3000	.030	3.8 g

[1] It is understood that the unit shall withstand vibrations at higher frequencies, but the acceleration values need not exceed those shown above.
When specified by the purchaser for use in rotary wing aircraft, the frequency range shall be 150–3000 cycles per minute.

4. *Detail requirements.*

4.1. *Design.*

4.1.1. The instrument shall consist of a means for:

Type I: Testing air for contamination with gaseous products of combustion. It shall include an alarm circuit or control circuit which will indicate the presence of contamination when it reaches a concentration of not more than 0.010% of carbon monoxide by volume.

Type II. Testing air for contamination with smoke or gas of all colors or particle sizes. It shall include an alarm circuit or control circuit which will indicate the presence of contamination which reduces the light transmission to not less than 90% of that of clear air. Percentage of transmission is defined as the light falling on a photoelectric cell through a one foot distance as compared to the light transmitted in clear air.

4.1.2. A means shall be incorporated in the design to admit the air sample to the sensitive element of the instrument in a positive manner.

4.2. *Indicating method.* The instrument shall be capable of actuating both visual and aural alarm indicators.

4.3. *Reliability.* False signals in the instrument shall not result from variations in voltage (+25% and −100% of the rated), flight altitude, accelerations encountered in flight or landing, and from normal amounts of dust they may accumulate within the instrument under normal flight operation.

4.4. *Integrity test provision.* The instrument shall be provided with a means for being tested in flight. The test shall cause operation of the alarm circuit or control circuit by initiating the sequency of actions through a disturbance in the instrument.

4.5. *Sampling characteristics.* When an instrument installation is designed to divert the air samples from more than one sampling station, it shall cycle at a rate not to exceed 30 seconds per sampling station, in which case, flow of air through all the sampling conduits shall be maintained continuously. In addition, when a smoke alarm is indicated, an alarm shall be actuated to indicate the location in which the smoke or gas is being generated and to continue to indicate the alarm until the condition is eliminated. It shall begin cycling in a normal manner within 30 seconds after releasing the alarm signal.

5. *Test conditions.*

5.1. *Atmospheric conditions.* Unless otherwise specified, all tests required by this specification shall be made at an atmospheric pressure of approximately 29.92 inches of mercury and at an ambient temperature of 22° C. When tests are made with the atmospheric pressure or the temperature substantially different from these values, allowance shall be made for the variations from the specified conditions.

5.2. *Vibration (to minimize friction).* Unless otherwise specified, all tests for performance may be made with the instrument subjected to a vibration of 0.002 to 0.005 inch amplitude at a frequency of 1,500 to 2,000 cycles per minute. The term amplitude as used herein indicates the total displacement from positive maximum to negative maximum.

5.3. *Vibration stand.* A vibration stand shall be used which will vibrate at any desired frequency between 500 and 3,000 cycles per minute and shall subject the instrument to vibration such that a point on the instrument will describe, in a plane inclined 45 degrees to the horizontal plane, a circle, the diameter of which is equal to the amplitude specified herein.

5.4. *Test position.* Unless otherwise specified, the instrument shall be mounted and tested in its normal operation position.

5.5. *Air sample.* Unless otherwise specified, air samples shall be as follows:

(1) Air containing 0.01% plus or minus 0.005% carbon monoxide, or

(2) Air containing smoke or gas having a light transmission value of 85% to 92% of that of clear air.

5.6. *Power conditions.* Unless otherwise specified all tests for performance shall be conducted at the power rating recommended by the manufacturer.

6. *Individual performance requirements.* All instruments, or components of such, shall be subjected to whatever tests the manufacturer deems necessary to demonstrate specific compliance with this specification including the following requirements where applicable.

6.1. *Response time.* The instrument shall be tested, so that, when an air sample per section 5.5 is introduced into the instrument under normal room temperature and atmospheric pressure conditions the alarm circuit or control circuit shall be energized within a maximum of 30 seconds.

6.2. *Dielectric.* The insulation shall be subjected to a dielectric test with an R. M. S. voltage at a commercial frequency applied for a period of 5 seconds equivalent to 5 times normal circuit operating voltage, except where circuits include components for which such a test would not be appropriate the test voltage shall be 1.25 times the normal circuit operating voltage. The insulation response shall not be less than 20 megohms at that voltage.

7. *Qualification tests.* As many instruments as deemed necessary to demonstrate that all instruments will comply with the requirements of this section shall be tested in accordance with the manufacturer's recommendations. The tests of each instrument shall be conducted consecutively and after the tests have been initiated, no further adjustments of the instrument shall be permitted. For those instruments which employ a cycling device for testing a multiplicity of locations with one instrument, these tests shall be conducted on the basis of a single sample station. During these tests no false alarm shall result.

7.1. *Stability.* The instrument shall be operated continuously for 24 hours at room temperature. At the end of the first and twenty-fourth hour of operation a sample of air, per section 5.5, shall be introduced into the instrument and the time required for operation of the alarm circuit or control circuit shall not exceed 30 seconds.

7.2. *Suction variation.* The instrument shall be operated continuously by varying the suction from 25% below to 25% above the rated. At each of these values a sample of air, per section 5.5, shall be introduced into the instrument and the time required for operation of the alarm circuit or control circuit shall not exceed 30 seconds.

7.3. *Voltage variation.* The instrument shall be operated with the voltage varying from 110% to 85% of the rated. The instrument shall then be tested with an air sample, per section 5.5, and the response time shall not exceed 30 seconds.

7.4. *High temperature.* The instrument shall be exposed to a temperature of 70° C. for a period of 6 hours after which it shall be tested with air at 60° C. for a period of 30 minutes without giving a false alarm. The instrument shall then be tested with an air sample, per section 5.5, and the response time shall not exceed 30 seconds.

7.5. *Low temperature.* The instrument shall be exposed to a temperature of −65° C. for a period of 24 hours, after which it shall be raised to a temperature of −55° C. for a period of 6 hours. After operating for 30 minutes at a temperature −55° C., without giving a false alarm, the response time to the air sample in section 5.5 shall not exceed 30 seconds.

7.6. *Humidity.* The instrument shall be subjected to an atmosphere 32° C. with a relative humidity of 95%, with the air sample being taken from the same atmosphere. After operating in this manner for 5 hours, an air sample per section 5.5, shall be introduced into the instrument and the time required for operation of the alarm circuit or control circuit shall not exceed 30 seconds.

7.7. *Altitude effect.* The instrument shall be subjected to an altitude pressure equivalent to 40,000 feet. After operating in this manner continuously for five hours the time required for reaction of the alarm circuit or control circuit, on a sample of air per section 5.5, shall not exceed 30 seconds.

7.8. *Vibration.* The instrument shall be mounted on a vibration stand, in its own shock-mounted base, if provided with one, in its normal operating plane. The test shall be conducted with the instrument in normal operation condition. The instrument shall be subjected to vibration with an amplitude between 0.003 and 0.005 inch at frequencies from 500 to 3,000 cycles per minute, in order to determine whether the natural frequency of the instrument does occur in this frequency range.

7.9. *Vibration endurance.* With the instrument mounted on a vibration stand, per section 7.8 and with the instrument in a normal operating condition, it shall be vibrated continuously at a total amplitude of 0.03 inch for a period of 24 hours at the natural frequency, if applicable, as determined in section 7.8, or if not applicable at a frequency of 2,000 cycles per minute. At the completion of this test the instrument shall be examined to determine that no looseness in the mechanism nor damage to any part has resulted from the vibration and also, it shall be subjected to a sample of air introduced into it as per section 5.5 and the response time shall not exceed 30 seconds.

Exceptions. Section 4.1.1, *Design.* Second sentence of Type II: "It shall include an

alarm circuit or control circuit which will indicate the presence of contamination which reduces the light transmission to not less than 84% nor more than 96% of that of clear air."

Section 5.5, *Air sample.* Subparagraph (2) "Air containing smoke or gas having a light transmission value of 84% to 96% of that of clear air. A bar placed across light path to provide necessary light cut-off which has been calibrated against smoke may be used in place of actual smoke samples."

Section 7.3, *Voltage variation.* "The instrument may be operated with the voltage varying from 110% to 90% of the rated voltage. The response time to an air sample per section 5.5 shall not exceed 30 seconds."

Section 7.4, *High temperature.* "An air temperature of 45° C. is acceptable for the test after six hours of exposure at 70° C. The response time to an air sample per section 5.5 shall not exceed 30 seconds."

Section 7.5, *Low temperature.* "The instrument may be exposed to a temperature of −54° C. for a period of 24 hours after which time it shall be operated for a period of 30 minutes at −54° C. without giving a false alarm. The response time to an air sample per section 5.5 shall not exceed 30 seconds."

Application. Smoke detectors complying with the specifications appearing in this order are hereby approved for all aircraft. Smoke detectors already approved by the Administrator may continue to be installed in aircraft.

(1) For which an application for original type certificate is made prior to the effective date of this order,

(2) The prototype of which is flown within one year after the effective date of this order, and

(3) The prototype of which is not flown within one year after the effective date of this order if due to causes beyond the applicant's control.

If a major change is made in the installation within nine months after the effective date of this order involving a change in type or model of smoke detector, previously approved types of smoke detectors may be installed. However, in any such change made after the nine-month period, new types of smoke detectors installed shall meet the specifications contained herein.

SPECIFIC INSTRUCTIONS

Marking. In addition to the identification information required in the referenced specification, each smoke detector shall be permanently marked with the Technical Standard Order designation, CAA–TSO–C1a, to identify the smoke detector as meeting the requirements of this order in accordance with the manufacturers' statement of conformance outlined below. This identification will be accepted by the Civil Aeronautics Administration as evidence that the established minimum safety requirements for the smoke detector have been met.

Data requirements. Ten copies of the following technical information shall be submitted to the Civil Aeronautics Administration, Aircraft and Components Service, Attn: A–298, Washington 25, D. C..

Installation recommendations prepared by the manufacturer covering the proper location, mounting, test circuits, and related technical information essential to insure proper functioning and maintenance of the unit as installed in the aircraft.

Effective date. After June 1, 1948, specifications contained in this Technical Standard Order will constitute the basis for Civil Aeronautics Administration approval of smoke detectors for use in certificated aircraft.

Deviations. Requests for deviation from, or waiver of, the requirements of this order, which affect the basic airworthiness of the component, should be submitted for approval by the Director, Aircraft and Components Service, Office of Safety Regulation, Civil Aeronautics Administration. These requests should be addressed to the nearest Regional Office of the Civil Aeronautics Administration, Attn: Superintendent, Aircraft and Components Branch.

Conformance. The manufacturer shall furnish to the CAA (address as noted under "Data Requirements" above), a written statement of conformance signed by a responsible official of his company, setting forth that the smoke detector to be produced by him meets the minimum safety requirements established in this order. Immediately thereafter distribution of the smoke detector conforming with the terms of this order may be started and continued.

The prescribed identification on the smoke detector does not relieve the aircraft manufacturer or owner of responsibility for the proper application of the smoke detector in his aircraft, nor waive any of the requirements concerning type certification of the aircraft in accordance with existing Civil Air Regulations.

If complaints of nonconformance with the requirements of this Order are brought to the attention of the Civil Aeronautics Administration, and investigation indicates that such complaints are justified, the Administrator will take appropriate action to restrict the use of the product involved.

Copies of this Technical Standard Order and other Technical Standard Orders may be obtained from the Civil Aeronautics Administration, Aviation Information Staff, Washington 25, D. C.

[Technical Standard Order C3a]

TURN AND BANK INDICATOR

Introduction. Turn and bank indicators are in the class of aircraft components which the Administrator of Civil Aeronautics is authorized to approve in accordance with Parts 03, 04, and 06 of the Civil Air Regulations.

This Technical Standard Order is intended to serve as a criterion by which the product manufacturer can obtain Civil Aeronautics Administration approval of his turn and bank indicator.

In the establishment of this Technical Standard Order, consideration has been given to existing Government and industry standards for turn and bank indicators for the purpose of adopting the performance requirements of one of the recognized aeronautical standards as the minimum safety requirements for turn and bank indicators which are intended for use in civil aircraft. The specification of the Society of Automotive Engineers for turn and bank indicators contains such requirements.

DIRECTIVE

Provision. Pursuant to §§ 03.06, 03.5, 04a.07, 04a.5, 04b.05, 04b.5, 06.05, and 06.5 of the Civil Air Regulations, which authorize the Administrator to approve aircraft equipment, the performance requirements for turn and bank indicators as set forth in SAE Specification AS–395, Turn and Bank Indicator, dated July 1, 1947,[1] stated below, are hereby established as minimum safety requirements for turn and bank indicators which are intended for use in civil aircraft:

1. *Purpose.* To specify minimum requirements for turn and bank indicators for use in aircraft, the operation of which may subject the instruments to the environmental conditions specified in section 3.4.

2. *Scope.* This specification covers three basic types of instruments as follows:

Type I. Air driven.
Type II. DC operated.
Type III. AC operated.

3. *General requirements.*

3.1. *Materials and workmanship.*

3.1.1. *Materials.* Materials shall be of a quality which experience and/or tests have demonstrated to be suitable and dependable for use in aircraft instruments.

3.1.2. *Workmanship.* Workmanship shall be consistent with high grade aircraft instrument manufacturing practice.

3.2. *Radio interference.* The instrument shall not be the source of objectionable interference, under operating conditions at any frequencies used on aircraft, either by radiation or feed back, in radio sets installed in the same aircraft as the instrument.

3.3. *Identification.* The following information shall be legibly and permanently marked on the instrument or attached thereto:

(a) Name of instrument (Turn and bank indicator).
(b) SAE Specification, AS–395.
(c) Rating (nominal electric or vacuum, etc.).
(d) Manufacturer's part number.
(e) Manufacturer's serial number or date of manufacture.
(f) Manufacturer's name or trademark.

3.4. *Environmental conditions.* The following are established design criteria only. All tests shall be run as per sections 5, 6 and 7.

3.4.1. *Temperature.* When installed in accordance with the instrument manufacturer's instructions the instrument shall function over the range of ambient temperature from −30° C. to 50° C. and shall not be adversely affected by exposure to temperatures in the range of −65° C. to 70° C.

3.4.2. *Humidity.* The instrument shall function and shall not be adversely affected when exposed to a relative humidity of up to and including 95% at a temperature of approximately 32° C.

3.4.3. *Altitude.* The instrument shall function and shall not be adversely affected when subjected to a pressure and temperature range equivalent to −1,000 to 40,000 feet standard altitude except that the instrument temperature shall not be lower than −30° C.

3.4.4. *Vibration.* When installed in accordance with the instrument manufacturer's instructions the instruments shall function and not be adversely affected when subjected to vibrations of not more than 0.010 inch at a frequency from 500 to 3,000 cycles per minute or of not more than 1.3 g. When specified by the purchaser for use in rotary wing aircraft, the frequency range shall be 150–3,000 cycles per minute.

NOTE: It is understood that the unit shall withstand vibration at higher frequencies, but the acceleration values need not exceed those shown above.

4. *Detail requirements.*

4.1. *Indicating method.* Turns shall be indicated by means of a pointer, deflecting in direction of turn. Banks shall be indicated by means of a black ball, free to move in a curved transparent tube.

4.2. *Visibility.* Both bank and turn indications shall be visible from any point within the frustum of a cone whose side makes an angle of not less than 30 degrees with the perpendicular to the dial and whose small diameter is the aperture of the instrument case. The distance between the dial and the cover glass shall be a practical minimum and shall not exceed 0.187 inch.

4.3. *Dial markings.*

4.3.1. *Finish.* Unless otherwise specified, luminescent (self-activating) material shall be applied to all markings, pointer and the inclinometer backing.

4.3.2. *Letters.* Letters "L" and "R" shall be legibly marked on the dial.

4.3.3 *Instrument name.* The words "Turn and Bank" shall be marked and may be indicated in the same finish as the letters.

4.4. *Power variations.* The instrument shall properly function with a voltage and frequency variation of ±10% of the rated

[1] Copies may be obtained from the Society of Automotive Engineers, 29 West Thirty-ninth Street, New York, N. Y.

value (provided the A–C voltage and frequency vary in the same direction) and/or ±30% of the rated vacuum pressure.

5. *Test conditions.*

5.1. *Atmospheric conditions.* Unless otherwise specified, all tests required by this specification shall be made at an atmospheric pressure of approximately 29.92 inches of mercury and at an ambient temperature of approximately 22° C. When tests are made with atmospheric pressure or temperature substantially different from these values allowance shall be made for the variation from the specified conditions.

5.2 *Vibration (to minimize friction).* Unless otherwise specified all test for performance may be made with the instrument subjected to a vibration of 0.002 to 0.005 inch amplitude at a frequency of 1,500 to 2,000 cycles per minute. The term amplitude as used herein indicates the total displacement from positive maximum to negative maximum.

5.3. *Vibration stand.* A vibration stand shall be used which will vibrate at any desired frequency between 500 and 3,000 cycles per minute and shall subject the instrument to vibration such that a point on the instrument case will describe in a plane inclined 45 degrees to the horizontal plane, a circle, the diameter of which is equal to the amplitude specified herein.

5.4. *Turntable.* A turntable which can be operated smoothly through the ranges specified herein shall be used for making calibration tests.

5.5. *Power conditions.* Unless otherwise specified all tests for performance shall be conducted at the power rating recommended by the manufacturer.

5.6. *Normal operation.* All instruments shall be operated at normal power for at least five minutes prior to conducting any tests (unless otherwise specified).

6. *Individual performance requirements.* All instruments or components of such shall be subjected to whatever tests the manufacturer deems necessary to demonstrate specific compliance with this specification including the following requirements where applicable.

6.1. *Bank indicator zero position.* With the instrument in normal position with the lower mounting holes on a horizontal line, the position of the ball shall be within 1/32 inch of the zero position.

6.2. *Bank indicator friction.* The ball shall move smoothly and without sticking throughout the full length of the tube.

6.3. *Bank indicator visibility.* With the ball in the extreme position at each end of the tube at least one half of it shall be visible from a point 12 inches directly in front of the zero mark.

6.4. *Bank indicator filling.* The instrument shall be rotated so that all the air in the tube is trapped in the expansion chamber. Then, with the plane of the dial vertical, the instrument shall be rotated to an angle of roll of 45° With the expansion chamber end of the tube low, no part of the air bubble shall be visible from a point 12 inches directly in front of the bank indicator zero position.

6.5. *Turn indicator starting.*

6.5.1. *Type I requirements.* The gyro rotor shall start to rotate and continue to run on a suction not to exceed 50% of rated value. Rated instrument performance speed shall be reached within five minutes after normal rated suction is applied.

6.5.2. *Types II and III requirements.* The gyro rotor shall start to rotate and continue to operate at a speed sufficient for proper performance of the instrument on an applied voltage not to exceed 80% of the rated voltage. This speed shall be reached within five minutes after application of the voltage.

6.6. *Turn indicator sensitivity, room temperature.* Starting in normal position and operating under rated power, the instrument shall be rotated about the vertical axis at the rates specified in Table I. Deflections of the turn indicator pointer shall be of the magnitude shown in Table I. Pointer motion shall be smooth.

6.7. *Dielectric test (Types II and III only).* The insulation shall be subjected to a dielectric test with a R. M. S. voltage at a commercial frequency applied for a period of five seconds equivalent to five times normal circuit operating voltage. Except where circuits include components for which such a test would not be appropriate, then the test voltage shall be 1.25 times normal circuit operating voltage. The insulation resistance shall not be less than 20 megohms at that voltage.

7. *Qualification tests.* As many instruments as deemed necessary to demonstrate that all instruments will comply with the requirements of this section shall be tested in accordance with the manufacturer's recommendations.

7.1. *Case leakage.* (Type I only.) A differential pressure of 15 inches of mercury between the inside and outside of the case shall not result in a leakage greater than that which will cause a pressure drop of 0.4 inch of mercury in 10 seconds.

7.2. *Bank indicator damping (room temperature).* When the instrument is suddenly rotated from a position of 12 degrees bank through the vertical to 12 degrees opposite bank, the time for the ball to move from the bank indicator zero position to the rest position at the end of the tube shall be 0.2 second or more.

7.3. *Bank indicator damping (low temperature).* The instrument shall be exposed without operating to a temperature of −65° C., for one hour. Then the instrument shall be tested as specified in Paragraph 7.2 except that the instrument shall operate at a temperature of −30° C. The time for ball motion from the zero position of the bank indicator to the rest position at the end of the tube shall not exceed four seconds.

7.4. *Bank indicator leakage.* The exposure of the instrument to a temperature of 70° C. for two hours shall not cause appreciable change in the size of the air bubble at room temperature.

7.5. *Magnetic effect.* The magnetic effect of the indicator shall be determined in terms of the deflection of a free magnet, approximately 1½ inches long, in a magnetic field with a horizontal intensity of 0.18 (±0.01) gauss when the indicator is held in various positions on an east-west line with its nearest part 5 inches from the center of the magnet. An Aircraft Compass with the compensating magnets removed therefrom may be used as the free magnet for this test. This test shall be made first with the instrument not operating and then shall be repeated with the instrument in normal operation. The maximum deflection of the magnet shall not exceed 2 degrees for any pointer position.

7.6. *Turn indicator damping, room temperature.* The instrument operating under rated power in normal position, shall be rotated about the vertical axis at a rate which causes full scale pointer deflection. The turn shall be stopped suddenly and the pointer shall return to the zero mark without crossing it in not less than two nor more than four seconds.

7.7. *Turn indicator sensitivity, low temperature.* After exposure to temperature of −30 C. for three hours, without operating, the instrument while still at −30 C. shall meet the requirements of paragraph 6.6 except that pointer deflection shall be as indicated in Table II. The performance shall be checked within ten minutes after power is applied. When turning is stopped the pointer shall return smoothly to zero within 1/32 inch.

7.8. *Turn indicator sensitivity, high temperature.* The conditions of paragraph 6.6 shall also be met at a test temperature of 70 C.

7.9. *Vibration.* With the gyro operating under rated power the instrument shall be vibrated at 500 cycles per minute and describe a circle of 0.003 to 0.005 inch diameter. The frequency shall be slowly increased to 3,000 cycles per minute and then decreased to 500 cycles per minute, to determine whether the natural frequency of the instrument occurs in this range. At no time shall the pointer leave the zero position more than 1/32 inch, and the ball shall remain at zero within 1/16 inch. After three hours exposure to vibration amplitude as specified in section 3.4.4 and at the natural frequency of between 500 and 3,000 cycles per minute, otherwise at 2,000 cycles per minute, no damage shall be evident and the instrument shall meet the requirements of section 6.

7.10. *Humidity.* The instrument shall be operated under the extreme conditions specified in section 3.4.2 for a period of 10 hours after which it shall meet the requirements of section 6.

TURN INDICATOR SENSITIVITY

TABLE I

Reference: Paragraph 6.6:

Rate of turning (degrees per minute)	*Deflection of pointer tip (inches)*
0	0±.015
36	1/16±1/64
180	9/16±1/64
360	1/2±1/16
1,080	1±1/8

TABLE II

Reference: Paragraph 7.7:

Rate of turning:	*Deflection of pointer tip (inches)*
180°	9/16±1/16
360°	1/2±1/8

Application. Turn and bank indicators complying with the specifications appearing in this Technical Standard Order are hereby approved for all aircraft. Turn and bank indicators already approved by the Administrator may continue to be installed in aircraft

(1) For which an application for original type certificate is made prior to the effective date of this order,

(2) The prototype of which is flown within one year after the effective date of this order, and

(3) The prototype of which is not flown within one year after the effective date of this order if due to causes beyond the applicant's control.

If a major change is made in the installation within nine months after the effective date of this order involving a change in type or model of turn and bank indicator, previously approved types of turn and bank indicators may be installed. However, in any such change made after the nine month period, new types of turn and bank indicators installed in aircraft used in instrument flight shall meet the specifications contained herein.

SPECIFIC INSTRUCTIONS

Marking. In addition to the identification information required in the referenced specification, each turn and bank indicator shall be permanently marked with the Technical Standard Order designation, CAA-TSO-C3 to identify the turn and bank indicator as meeting the requirements of this order in accordance with the manufacturers' statement of conformance outlined below. This identification will be accepted by the Civil Aeronautics Administration as evidence that the established minimum safety requirements for turn and bank indicators have been met.

Data requirements. None.

Effective date. After July 1, 1948, specifications contained in this Technical Standard Order will constitute the basis for Civil Aeronautics Administration approval of turn and bank indicators for use in certificated aircraft used in instrument flight.

Deviations. Requests for deviation from, or waiver of, the requirements of this order, which affect the basic airworthiness of the component, should be submitted for approval by the Director, Aircraft and Components Service, Office of Safety Regulation, Civil Aeronautics Administration. These requests should be addressed to the nearest Regional Office of the Civil Aeronautics Administration, Attn: Superintendent, Aircraft and Components Branch.

Conformance. The manufacturer shall furnish to the CAA, Aircraft and Components Service, A-298, Washington, D. C., a written statement of conformance signed by a responsible official of his company, setting forth that the turn and bank indicator to be produced by him meets the minimum safety requirements established in this order. Immediately thereafter distribution of the turn and bank indicator conforming with the terms of this Order may be started and continued.

The prescribed identification on the turn and bank indicator does not relieve the aircraft manufacturer or owner of responsibility for the proper application of the turn and bank indicator in his aircraft, nor waive any of the requirements concerning type certification of the aircraft in accordance with existing Civil Air Regulations.

If complaints of nonconformance with the requirements of this Order are brought to the attention of the Civil Aeronautics Administration, and investigation indicated that such complaints are justified, the Administrator will take appropriate action to restrict the use of the product involved.

Copies of this Technical Standard Order and other Technical Standard Orders may be obtained from the Civil Aeronautics Administration, Aviation Information Staff, Washington 25, D. C.

[Technical Standard Order C4a]

BANK AND PITCH INDICATOR (STABILIZED TYPE) (GYRO HORIZON, ATTITUDE GYRO)

Introduction. Bank and pitch indicators are in the class of aircraft components which the Administrator of Civil Aeronautics is authorized to approve in accordance with Parts 03, 04, and 06 of the Civil Air Regulations.

This Technical Standard Order is intended to serve as a criterion by which the product manufacturer can obtain Civil Aeronautics Administration approval of his bank and pitch indicator.

In the establishment of this Technical Standard Order, consideration has been given to existing Government and industry standards for bank and pitch indicators for the purpose of adopting the performance requirements of one of the recognized aeronautical standards as the minimum safety requirements for bank and pitch indicators which are intended for use in civil aircraft. The specification of the Society of Automotive Engineers for bank and pitch indicators contains such requirements.

DIRECTIVE

Provision. Pursuant to §§ 03.06, 03.5, 04a.07, 04a.5, 04b.05, 04b.5, 06.05, and 06.5 of the Civil Air Regulations, which authorize the Administrator to approve aircraft equipment, the performance requirements for bank and pitch indicators as set forth in SAE Specification AS-396, Bank and Pitch Indicator, dated August 1, 1947,[1] stated below, are hereby established as minimum safety requirements for bank and pitch indicators which are intended for use in civil aircraft.

1. *Purpose.* To specify minimum requirements for gyroscopically stabilized bank and pitch indicators for use in aircraft, the operation of which may subject the instrument to the environmental conditions specified in section 3.4.

2. *Scope.* This specification covers two basic types as follows:

Type I. Having limited freedom of operation.

Type II. Having unlimited freedom of operation.

3. *General requirements.*

3.1. *Material and workmanship.*

3.1.1. *Materials.* Materials shall be of a quality which experience and/or tests have demonstrated to be suitable and dependable for use in aircraft instruments.

3.1.2. *Workmanship.* Workmanship shall be consistent with high-grade aircraft instrument manufacturing practice.

3.2. *Radio interference.* The instrument shall not be the source of objectionable interference, under operating conditions at any frequencies used on aircraft, either by radiation or feed-back, in radio sets installed in the same aircraft as the instrument.

3.3. *Identification.* The following information shall be legibly and permanently marked on the instrument or attached thereto:

(a) Name of instrument.
(b) S. A. E. Spec. AS 396.
(c) Rating (electrical, vacuum, etc.).
(d) Manufacturer's part number.
(e) Manufacturer's serial number or date of manufacture.
(f) Manufacturer's name and/or trademark.

3.4. *Environmental conditions.* The following conditions have been established as design criteria only. Tests shall be conducted as specified in sections 5, 6 and 7.

3.4.1. *Temperature.* When installed in accordance with the instrument manufacturer's instructions the unit shall function over the range of ambient temperatures shown in column A below and shall not be adversely affected by exposure to the temperatures shown in column B below:

Instrument location	A	B
Heated areas (temperature controlled)	−55° to 55° C.	−55° to 70° C.
Unheated areas (temperature uncontrolled)	−55° to 70° C.	−55° to 70° C.

3.4.2. *Humidity.* The instrument shall function and not be adversely affected when exposed to a relative humidity up to and including 90 percent at a temperature of approximately +33° C.

3.4.3. *Altitude.* The instrument shall function and not be adversely affected when subjected to a pressure and temperature range equivalent to −1,000 to +40,000 feet standard altitude, except as limited by application of section 3.4.1.

3.4.4. *Vibration.* When installed accordance with the instrument manufacturer's instructions, the units shall function and shall not be adversely affected when subject to the following vibrations:

Type of instrument mounting	Cycles per minute[1]	Amplitude[1]	Maximum acceleration
Shock mounted panel instruments	500-3000	Inch 0.005	0.8g
Unshock mounted panel instruments	500-3000	.010	1.3g
Structure mounted instruments	500-3000	.003	3.8g

[1] It is understood that the unit shall withstand vibration at higher frequencies, but the acceleration values need not exceed those shown above.

When specified by the purchaser for use in rotary wing aircraft, the frequency range shall be 150–3,000 cycles per minute.

4. *Detail requirements.*

4.1. *Indicating method.* One of the following methods of indication shall be employed:

Method I—Horizontal bar which moves with respect to a fixed pitch reference marker. At the top of the dial, a pointer which moves angularly with respect to the bezel mark. Horizontal bar appears to move toward top of instrument face for dive and appears to rotate clockwise for left bank. Banking pointer appears to rotate clockwise for left bank.

Method II—Spherical dial which moves with respect to a fixed reference marker. The spherical dial appears to move down for dive and appears to rotate clockwise for left bank.

4.2. *Operating range.*

Type I—The useful operating range and the indicating range of the instrument shall be at least plus or minus 60 degrees in pitch and at least plus or minus 90 degrees in roll.

Type II—The useful operating range of the instrument shall be through 360 degrees in pitch and 360 degrees in roll. The range of indication in pitch for Method I indication shall be at least plus or minus 25 degrees and for Method II it shall be 360 degrees.

4.3. *Dial markings.*

4.3.1. *Increments.*

Type I—Right and left bank graduations shall be provided at intervals not to exceed 30 degrees between 0 and 90 degrees.

Type II—Bank graduations shall be as specified for Type I above. In addition, the sphere shall be graduated at intervals not to exceed 30 degrees from 0 to 90 degrees above and below the horizontal centerline.

4.3.2. *Visibility.* Index and dial markings shall be visible from any point within the frustum of a cone the side of which makes an angle of 30 degrees with the perpendicular to the dial and small diameter of which is the aperture of the instrument case.

4.3.3. *Finish.* Unless otherwise specified, luminescent material (self-activating) shall be applied to major graduations and numerals.

4.4. *Power variation.* All units shall properly function with ±15% variation in D. C. voltage and/or 10% variation in A. C. voltage and frequency, provided the A. C. voltage and frequency vary in the same direction.

4.5. *Turn error.* The pitch or bank indication error resulting from a coordinated turn of 180 degrees in 1 minute at a true airspeed of 180 m. p. m. shall not exceed 5 degrees.

4.6. *Gyro caging provisions.* Unless the gyro assembly has unrestricted freedom of operation in the pitch and roll axes, means shall be provided for caging and/or releveling the gyro. Means shall be provided to indicate when the gyro is caged, except when it is not possible to leave the gyro in caged condition.

4.7. *Power indication.* Means shall be provided to permit the operation of a device to indicate whether the instrument is receiving power.

5. *Test conditions.*

5.1. *Atmospheric conditions.* Unless otherwise specified, all tests required by this specification shall be made at an atmospheric pressure of approximately 29.92 inches of mercury and at an ambient temperature of approximately 220. When tests are made with the atmospheric pressure or the temperature substantially different from these values, allowance shall be made for the variation from the specified conditions.

5.2. *Vibration (to minimize friction).* Unless otherwise specified, all tests for performance may be made with the instrument subjected to a vibration of 0.002 to 0.005 inch amplitude at a frequency of 1,500 to 2,000 cycles per minute. The term amplitude as used herein indicates the total displacement from positive maximum to negative maximum.

5.3. *Power conditions.* Unless otherwise specified, all tests for performance shall be

[1] Copies may be obtained from the Society of Automotive Engineers, 29 W. 39th St., New York, N. Y.

conducted at the power rating recommended by the manufacturer.

5.4. *Position.* Unless otherwise specified, all tests shall be made with the instrument in normal level position.

5.5. *Vibration stand.* For vibration tests a stand shall be used which will vibrate at any desired frequency between 500 and 3,000 cycles per minute and shall subject the instrument to vibration such that a point on the instrument case will describe, in a plane inclined 45 degrees to the horizontal plane, a circle, the diameter of which is equal to the amplitude specified herein.

6. *Individual performance requirements.* All instruments, or components of such, shall be subjected to whatever tests the manufacturer deems necessary to demonstrate specific compliance with this specification, including the following requirements where applicable:

6.1. *Starting.* The gyro rotor shall start to rotate and continue to run on application of 50 percent of rated suction for air operated instruments and 80 percent of rated voltage for electrically operated instruments. Rated instrument performance speed shall be reached within 3 minutes after normal rated power is applied.

6.2. *Roll, pitch and yaw.* When the gyro has erected and attained equilibrium speed, and the instrument has been oscillated through an angle of ± 7½ degrees about each axis at a frequency of 5 to 7 cycles per minute for 10 minutes and then returned to level position, the alignment of the bank pointer (or vertical centerline of sphere) with their respective zero reference markers shall be within one degree.

6.3. *Climbing and diving.* With the instrument level, the gyro running at equilibrium speed and the gyro offset to the 20 degree climb indication, the time required for the gyro to erect to the 10 degree climb indication shall not exceed 8 minutes.

The time required to erect from the 10 degree climb indication to the zero pitch indication shall not exceed 12 minutes.

6.4. *Banking.* With the instrument level, the gyro running at equilibrium speed and the gyro offset to the 20 degree right bank indication, the time required for the gyro to erect to the 10 degree right bank indication shall not exceed 8 minutes.

The time required to erect from the 10 degree right bank indication to the zero bank indication (within 1 degree) shall not exceed 12 minutes.

The same tolerances shall apply when the gyro is offset to the 20 degree left bank indication and allowed to erect to the zero bank indication.

6.5. *Dielectric test.* The instrument shall be subject to a dielectric test with a R. M. S. voltage equivalent to five times operating voltage, but at a commercial frequency, applied between each ungrounded terminal and the instrument case for a period of 5 seconds. The breakdown resistance shall not be less than 20 megohms at that voltage (A. C. or D. C. as applicable).

7. *Qualification tests.* As many instruments as deemed necessary to demonstrate that all instruments will comply with the requirements of this section shall be tested in accordance with the manufacturer's recommendations.

7.1 *Low temperature operation.* After exposure to an ambient temperature of -30° C. for 5 hours, without operating, the instrument shall start upon application of rated power and at that temperature shall meet the requirements of section 6.2 except that the allowable alignment tolerance shall be 2 degrees.

7.2. *High temperature operation.* The requirements of section 7.1 shall apply except that the ambient temperature for exposure and test shall be 50° C.

7.3. *Extreme temperature exposure.* After 3 hours at room temperature following alternate exposures to ambient temperatures of —65° C. and 70° C. for 24 hours each, without operating, the instrument shall meet the requirements of section 6.2. No damage shall have resulted from the extreme temperature exposure specified herein.

7.4. *Magnetic effect.* The magnetic effect of the indicator shall be determined in terms of the deflection of a free magnet, approximately 1½ inches long, in a magnetic field with a horizontal intensity of 0.18 (±0.01) gauss when the indicator is held in various positions on an east-west line with its nearest part 5 inches from the center of the magnet. This test shall first be made with the indicator not operating and then shall be repeated with the indicator in normal operation. The maximum deflection of the free magnet shall not exceed 5 degrees for any indicating or reference position.

7.5. *Humidity.* After operating under the extreme condition specified in section 3.4.2 for 10 hours, the instrument shall meet the requirements of section 6.2.

7.6. *Vibration.* The instrument(s) shall be subjected, while in normal operation, to vibration with an amplitude of 0.005 inch at frequencies from 1,000 to 3,000 cycles per minute in order to determine whether the natural frequency of the instrument(s) is in this frequency range. After 3 hours' exposure to vibration amplitudes as specified in section 3.4.4 and at the natural frequency, if between 1,000 and 3,000 c. p. m., otherwise at 2,000 c. p. m., the instrument(s) shall meet the requirements of section 6.1, 6.2 and 6.3. No damage shall be evident after this test.

Application. Bank and pitch indicators complying with the specifications appearing in this Technical Standard Order are hereby approved for all aircraft. Bank and pitch indicators already approved by the Administrator may continue to be installed in aircraft

(1) For which an application for original type certificate is made prior to the effective date of this order,

(2) The prototype of which is flown within one year after the effective date of this order, and

(3) The prototype of which is not flown within one year after the effective date of this order if due to causes beyond the applicant's control.

If a major change is made in the installation within nine months after the effective date of this order involving a change in type or model of bank and pitch indicator, previously approved types of bank and pitch indicators may be installed. However, in any such change made after the nine month period, new types of bank and pitch indicators installed in aircraft used in instrument flight shall meet the specifications contained herein.

SPECIFIC INSTRUCTIONS

Marking. In addition to the identification information required in the referenced specification, each bank and pitch indicator shall be permanently marked with the Technical Standard Order designation, CAA–TSO–C4 to identify the bank and pitch indicator as meeting the requirements of this order in accordance with the manufacturers' statement of conformance outlined below. This identification will be accepted by the Civil Aeronautics Administration as evidence that the established minimum safety requirements for bank and pitch indicators have been met.

Data requirements. None.

Effective date. After July 1, 1948, specifications contained in this Technical Standard Order will constitute the basis for Civil Aeronautics Administration approval of bank and pitch indicators for use in certificated aircraft used in instrument flight.

Deviations. Requests for deviation from, or waiver of, the requirements of this order, which affect the basic airworthiness of the component, should be submitted for approval by the Director, Aircraft and Components Service, Office of Safety Regulation, Civil Aeronautics Administration. These requests should be addressed to the nearest Regional Office of the Civil Aeronautics Administration, Attn: Superintendent, Aircraft and Components Branch.

Conformance. The manufacturer shall furnish to the CAA, Aircraft and Components Service, A–298, Washington, D. C., a written statement of conformance signed by a responsible official of his company, setting forth that the bank and pitch indicator to be produced by him meets the minimum safety requirements established in this order. Immediately thereafter distribution of the bank and pitch indicator conforming with the terms of this order may be started and continued.

The prescribed identification on the bank and pitch indicator does not relieve the aircraft manufacturer or owner of responsibility for the proper application of the bank and pitch indicator in his aircraft, nor waive any of the requirements concerning type certification of the aircraft in accordance with existing Civil Air Regulations.

If complaints of nonconformance with the requirements of this order are brought to the attention of the Civil Aeronautics Administration, and investigation indicated that such complaints are justified, the Administrator will take appropriate action to restrict the use of the product involved.

Copies of this Technical Standard Order and other Technical Standard Orders may be obtained from the Civil Aeronautics Administration, Aviation Information Staff, Washington 25, D. C.

[Technical Standard Order C5a]

DIRECTION INDICATOR, NON-MAGNETIC, STABILIZED TYPE (DIRECTIONAL GYRO)

Introduction. Non-magnetic direction indicators are in the class of aircraft components which the Administrator of Civil Aeronautics is authorized to approve in accordance with Parts 03, 04, and 06 of the Civil Air Regulations.

This Technical Standard Order is intended to serve as a criterion by which the product manufacturer can obtain Civil Aeronautics Administration approval of his non-magnetic direction indcator.

In the establishment of this Technical Standard Order, consideration has been given to existing Government and industry standards for non-magnetic direction indicators for the purpose of adopting the performance requirements of one of the recognized aeronautical standards as the minimum safety requirements for non-magnetic direction indicators which are intended for use in civil aircraft. The specification of the Society of Automotive Engineers for non-magnetic direction indicators contains such requirements.

DIRECTIVE

Provision. Pursuant to §§ 03.06, 03.5, 04a.07, 04a.5, 04b.05, 04b.5, 06.05, and 06.5 of the Civil Air Regulations, which authorize the Administrator to approve aircraft equipment, the performance requirements for non-magnetic direction indicators as set forth in SAE Specification AS–397, Direction Indicator, Non-Magnetic, Stabilized Type (Directional Gyro) dated February 1, 1947,[1] stated below, are hereby established as minimum safety requirements for non-magnetic direction indicators which are intended for use in civil aircraft:

1. *Purpose.* To specify minimum requirements for non-magnetic gyroscopically stabilized direction indicators for use in aircraft.

[1] Copies may be obtained from the Society of Automotive Engineers, 29 West Thirty-ninth Street, New York, N. Y.

2. *Scope.* This specification covers two basic types as follows:

Type I. Air operated.

Type II. Electrically operated.

3. *General requirements:*

3.1. *Material and workmanship.*

3.1.1. *Materials.* Materials shall be of a quality which experience and/or tests have demonstrated to be suitable and dependable for use in aircraft instruments.

3.1.2. *Workmanship.* Workmanship shall be consistent with high-grade aircraft instrument manufacturing practice.

3.2. *Radio interference.* The instrument shall not be the source of objectionable interference, under operating conditions at any frequencies used on aircraft, either by radiation or feed-back, in radio sets installed in the same aircraft as the instrument.

3.3. *Identification.* The following information shall be legibly and permanently marked on the instrument or attached thereto:

(a) Name of instrument.

(b) SAE Spec. AS 397.

(c) Rating (electrical, vacuum, etc.).

(d) Manufacturer's part number.

(e) Manufacturer's serial number or date of manufacture.

(f) Manufacturer's name and/or trademark.

3.4. *Environmental conditions.*

3.4.1. *Temperature.* The instrument shall function over the temperatur range −30° C. to +50° C. and shall not be adversely affected by exposure to temperatures in the range −65° C. to +70° C.

3.4.2. *Humidity.* The instrument shall function and not be adversely affected when exposed to a relative humidity up to and including 95 percent at a temperature of approximately 32° C.

3.4.3. *Altitude.* The instrument shall function and not be adversely affected when subjected to a pressure range equivalent to −1,000 feet to +40,000 feet standard altitude.

3.4.4. *Vibration.* The instrument shall function and not be adversely affected when subjected to vibration of 0.005 inch maximum amplitude at frequencies of 150–3,000 cycles per minute. The instrument shall withstand vibration, at higher frequencies, having acceleration values not to exceed 0.8 g.

4. *Detailed requirements.*

4.1. *Indicating method.* One of the following methods of indication shall be employed:

Method I. Horizontal drum dial with fixed lubber's line. Graduations move to the right for right turns.

Method II. Rotating vertical dial with fixed lubber's line at the top. Dial rotates counterclockwise for right turns.

Method III. Rotating pointer with fixed graduated dial. Pointer rotates clockwise for right turns.

4.2. *Operating limits.* The instrument shall indicate throughout the 360 degree scale range, during dives, climbs or banks up to at least 55 degrees displacement from level flight.

4.3. *Dial markings.*

4.3.1. *Increments.* Degree graduations shall be provided at intervals not to exceed 5 degrees with major graduations at 10, 20, 30, etc., degrees and with legible numerals at intervals not greater than 30 degrees throughout the scale range of 360 degrees. In the numerical marking the last digit (zero) shall be omitted. (Thus, 6 at 60 degrees, 9 at 90 degrees, etc.)

4.3.2. *Visibility.* Index and dial markings shall be visible from any point within the frustum of a cone the side of which makes an angle of 30 degrees with the perpendicular to the dial and the small diameter of which is the aperture of the instrument case. At lease two numerals shall be simultaneously visible.

4.3.3. *Finish.* Unless otherwise specified, luminescent material shall be applied to major graduations and numerals.

4.4. *Course setting provisions.* A means shall be provided for manually setting the directional indicator dial (or pointer) indication to any heading desired.

4.5. *Gyro caging provisions.* Unless the gyro assembly has unrestricted freedom of operation in the pitch and roll axes, means shall be provided for caging and releveling the gyro should it become upset by operation beyond its limits. A conspicuous warning device shall indicate when the instrument is caged, except when it is not possible to leave the instrument in caged condition.

4.6. *Power indication.* Suitable internal or external means shall be provided for operating a device to indicate whether the instrument is receiving power.

5. *Test conditions.*

5.1. *Atmospheric conditions.* Unless otherwise specified, all tests required by this specification shall be made at an atmospheric pressure of approximately 29.92 inches of mercury and at an ambient temperature of approximately 22° C. When tests are made with the atmospheric pressure or the temperature substantially different from these values allowance shall be made for the variation from the specified conditions.

5.2. *Vibration.* Unless otherwise specified all tests for performance may be made with the instrument subjected to a vibration of 0.002 to 0.005 inch amplitude at a frequency of 1,500 to 2,000 cycles per minute. The term amplitude as used herein indicates the total displacement from positive maximum to negative maximum.

5.3. *Power conditions.* Unless otherwise specified all tests for performance shall be conducted at the power rating recommended by the manufacturer.

6. *Individual performance tests.* All Type I and Type II instruments shall meet the requirements of the following individual tests where applicable.

6.1. *Type I requirements.*

6.1.1. *Starting.* The gyro rotor shall start to rotate and continue to run on a suction not to exceed 50 percent of rated value. Rated instrument performance speed shall be reached within two minutes after normal rated suction is applied.

6.1.2. *Roll, pitch and yaw.* The instrument shall be mounted on a test platform which is adjusted to oscillate in roll, pitch and yaw, with a total amplitude of 3 degrees about each axis, at a frequency of 5 to 7 oscillations per minute. With the platform level, and the gyro operating at equilibrium speed and uncaged, the dial (or pointer) reading shall be noted. The platform shall then be started in its roll, pitch and yaw movement. At the end of a ten minute period the oscillation shall be stopped, the platform realigned to its starting position, and the instrument dial (or pointer) reading noted. The amount of drift of the dial (or pointer) in either direction during the ten minute test period shall not exceed 4 degrees.

6.1.3. *Heading stability.* The instrument shall be mounted on a turn table, tilted 54 (±1) degrees from the vertical and the reading noted. The turn table shall be rotated one complete revolution about its vertical axis at 360 (±30) degrees per minute and the drift of the dial (or pointer) shall not exceed two degrees. The test shall be repeated rotating the turn table in the opposite direction.

6.2. *Type II requirements.*

6.2.1. *Starting.* The gyro rotor shall start to rotate and continue to operate at a speed sufficient for proper performance of the instrument on an applied voltage not to exceed 80 percent of the rated voltage. This speed shall be reached within two minutes after application of this voltage.

6.2.2. *Roll, pitch and yaw.* Same as for Type I.

6.2.3. *Heading stability.* Same as for Type I.

6.2.4. *Dielectric.* The instrument shall be subjected to a dielectric test with a R. M. S. voltage equivalent to five times operating voltage but at a commercial frequency applied between each terminal and the instrument case for a period of 5 seconds. The breakdown resistance shall not be less than 20 megohms at that voltage (A. C. or D. C. as applicable).

7. *Qualification tests.* As many instruments as appears necessary to demonstrate that all instruments will comply with the requirements of this section shall be subjected to the following additional tests:

7.1. *Low temperature operation.* The instrument shall be placed in a low temperature apparatus which will hold it in a level attitude. The instrument shall be subjected for a period of 2 hours to a temperature of −30° C. without operating. At the end of that period the instrument shall be started by application of rated power. The amount of drift of the dial (or pointer) in either direction during a 10-minute period shall not exceed 5 degrees.

7.2. *High temperature operation.* The foregoing test shall be repeated at a temperature of 50° C.

7.3. *Extreme temperature exposure.* The instrument shall first be subjected to the Roll Pitch and Yaw Test specified in section 6 and shall meet the requirements of that test. The instrument shall then be subjected for a period of 24 hours to a temperature of −65° C. without operating. Upon completion of this exposure the instrument shall be returned to room temperature. After a period of not less than three hours the instrument shall be subjected for a period of 24 hours to a temperature of 70° C. without operating. Upon completion of this exposure the instrument shall be returned to room temperature. After a period of not less than three hours the instrument shall again be subjected to the Roll, Pitch and Yaw Test of section 6 and shall meet the requirements of that test. The instrument shall then be examined and shall not show evidence of damage as a result of exposure to the extreme temperatures specified herein.

7.4. *Magnetic effect.* The magnetic effect of the indicator shall be determined in terms of the deflection of a free magnet, approximately 1½ inches long, in a magnetic field with a horizontal intensity of 0.18 (±0.01) gauss when the indicator is held in various positions on an east-west line with its nearest part 5 inches from the center of the magnet. An aircraft compass with the compensating magnets removed therefrom may be used as the free magnet for this test. This test shall be made first with the instrument not operating and then shall be repeated with the instrument in normal operation. The maximum deflection of the magnet shall not exceed 2 degrees.

7.5. *Humidity.* The instrument shall be operated under the conditions specified in 3.4.2 for a period of 10 hours after which it shall meet the requirements of 6.1.2.

Application. Non-magnetic direction indicators complying with the specifications appearing in this Technical Standard Order are hereby approved for all aircraft. Non-magnetic direction indicators already approved by the Administrator may continue to be installed in aircraft

(1) For which an application for original type certificate is made prior to the effective date of this order,

(2) The prototype of which is flown within one year after the effective date of this order, and

(3) The prototype of which is not flown within one year after the effective date of this order if due to causes beyond the applicant's control.

If a major change is made in the installation within nine months after the effective date of this order involving a change in type or model of non-magnetic direction indicator, previously approved types of non-magnetic direction indicators may be installed. However, in any such change made after the nine month period, new types of non-magnetic direction indicators installed in aircraft used in instrument flight shall meet the specifications contained herein.

SPECIFIC INSTRUCTIONS

Marking. In addition to the identification information required in the referenced specification, each non-magnetic direction indicator shall be permanently marked with the Technical Standard Order designation, CAA-TSO-C5 to identify the non-magnetic direction indicator as meeting the requirements of this order in accordance with the manufacturers' statement of conformance outlined below. This identification will be accepted by the Civil Aeronautics Administration as evidence that the established minimum safety requirements for non-magnetic direction indicators have been met.

Data requirements. None.

Effective date. After July 1, 1948, specifications contained in this Technical Standard Order will constitute the basis for Civil Aeronautics Administration approval of non-magnetic direction indicators for use in certificated aircraft used in instrument flight.

Deviations. Requests for deviation from, or waiver of, the requirements of this order, which affect the basic airworthiness of the component, should be submitted for approval by the Director, Aircraft and Components Service, Office of Safety Regulation, Civil Aeronautics Administration. These requests should be addressed to the nearest Regional Office of the Civil Aeronautics Administration, Attn: Superintendent, Aircraft and Components Branch.

Conformance. The manufacturer shall furnish to the CAA, Aircraft and Components Service, A-298, Washington, D. C., a written statement of conformance signed by a responsible official of his company, setting forth that the non-magnetic direction indicator to be produced by him meets the minimum safety requirements established in this order. Immediately thereafter distribution of the non-magnetic direction indicator conforming with the terms of this order may be started and continued.

The prescribed identification on the non-magnetic direction indicator does not relieve the aircraft manufacturer or owner of responsibility for the proper application of the non-magnetic direction indicator in his aircraft, nor waive any of the requirements concerning type certification of the aircraft in accordance with existing Civil Air Regulations.

If complaints of nonconformance with the requirements of this order are brought to the attention of the Civil Aeronautics Administration, and investigation indicated that such complaints are justified, the Administrator will take appropriate action to restrict the use of the product involved.

Copies of this Technical Standard Order and other Technical Standard Orders may be obtained from the Civil Aeronautics Administration, Aviation Information Staff, Washington 25, D. C.

[Technical Standard Order C6a]

DIRECTION INDICATOR, MAGNETIC (STABILIZED TYPE) (STABILIZED MAGNETIC COMPASS)

Introduction. Stabilized magnetic direction indicators are in the class of aircraft components which the Administrator of Civil Aeronautics is authorized to approve in accordance with Parts 03, 04, and 06 of the Civil Air Regulations.

This Technical Standard Order is intended to serve as a criterion by which the product manufacturer can obtain Civil Aeronautics Administration approval of his stabilized magnetic direction indicator.

In the establishment of this Technical Standard Order, consideration has been given to existing Government and industry standards for stabilized magnetic direction indicators for the purpose of adopting the performance requirements of one of the recognized aeronautical standards as the minimum safety requirements for stabilized magnetic direction indicators which are intended for use in civil aircraft. The specification of the Society of Automotive Engineers for stabilized magnetic direction indicators contains such requirements.

DIRECTIVE

Provision. Pursuant to §§ 03.06, 03.5, 04a.07, 04a.5, 04b.05, 04b.5, 06.05, and 06.5 of the Civil Air Regulations, which authorize the Administrator to approve aircraft equipment, the performance requirements for stabilized magnetic direction indicators as set forth in SAE Specification AS-399, Direction Indicator, Magnetic, dated August 1, 1947,[1] stated below, are hereby established as minimum safety requirements for stabilized magnetic direction indicators which are intended for use in civil aircraft:

1. *Purpose.* To specify minimum requirements for gyroscopically stabilized (or integrated) magnetic direction indicators for use in aircraft, the operation of which may subject the instrument to the environmental conditions specified in section 3.4.

2. *Scope.* This specification covers minimum requirements for gyroscopically stabilized (or integrated) magnetic direction indicators for use in aircraft.

3. *General requirements.*

3.1. *Material and workmanship.*

3.1.1. *Materials.* Materials shall be of a quality which experience and/or tests have demonstrated to be suitable and dependable for use in aircraft instruments.

3.1.2. *Workmanship.* Workmanship shall be consistent with high-grade aircraft instrument manufacturing practice.

3.2. *Radio interference.* The instrument shall not be the source of objectionable interference, under operating conditions at any frequencies used on aircraft, either by radiation or feed-back, in radio sets installed in the same aircraft as the instrument.

3.3. *Identification.* The following information shall be legibly and permanently marked on each unit or attached thereto:

(a) Name of instrument.
(b) S. A. E. Spec. AS 399.
(c) Rating (electrical, vacuum, etc.).
(d) Manufacturer's part number.
(e) Manufacturer's serial number or date of manufacture.
(f) Manufacturer's name and/or trademark.

3.4. *Environmental conditions.* The following conditions have been established as design criteria only. Tests shall be conducted as specified in sections 5, 6 and 7.

3.4.1. *Temperature.* When installed in accordance with the instrument manufacturer's instructions the unit shall function over the range of ambient temperatures shown in Column A below and shall not be adversely affected by exposure to the temperatures shown in column B below:

Instrument location	A	B
Heated areas (temperature controlled)	−30° to 50° C.	−65° to 70° C.
Unheated areas (temperature uncontrolled)	−55° to 70° C.	−65° to 70° C.

3.4.2. *Humidity.* The instrument shall function and not be adversely affected when exposed to a relative humidity up to and including 95% at a temperature of approximately 32° C.

3.4.3. *Altitude.* The instrument shall function and not be adversely affected when subjected to a pressure and temperature range equivalent to −1,000 to +40,000 feet standard altitude, except as limited by application of section 3.4.1.

3.4.4. *Vibration.* When installed in accordance with the instrument manufacturer's instructions, the units shall function and shall not be adversely affected when subject to the following vibrations:

Type of instrument mounting	Cycles per minute[1]	Amplitude[1]	Maximum acceleration
		Inch	
Shock mounted panel instruments	500-3000	0.005	0.8 g
Unshock mounted panel instruments	500-3000	.010	1.3 g
Structure mounted instruments	500-3000	.030	3.8 g

[1] It is understood that the unit shall withstand vibration at higher frequencies, but the acceleration values need not exceed those shown above.

When specified by the purchaser for use in rotary wing aircraft, the frequency range shall be 150-3,000 cycles per minute.

4. *Detail requirements.*

4.1. *Indicating method.* One of the following methods of indication shall be employed:

Method I. Horizontal drum dial with fixed lubber's line. The graduations shall move to the right for right turns.

Method II. Rotating vertical dial with fixed lubber's line. Dial shall rotate counterclockwise for right turns.

Method III. Rotating pointer with fixed graduated dial. Pointer shall rotate clockwise for right turns. Dial position may be settable.

4.2. *Operating limits.* The instrument shall indicate magnetic heading throughout the 360 degree scale range, during dives, climbs or banks up to at least 60 degrees displacement from level flight.

4.3. *Dial markings.*

4.3.1. *Increments.* The indicators shall be provided with degree graduations at intervals not to exceed 5 degrees, with major graduations every 10 degrees and with numerals at intervals not greater than 30 degrees, except that the 0, 90, 180 and 270 degree positions shall be marked N, E, S and W respectively.

4.3.2. *Visibility.* Index and dial markings shall be visible from any point within the frustum of a cone the side of which makes an angle of 30 degrees with the perpendicular to the dial and the small diameter of which is the aperture of the instrument case. At least two numerals shall be simultaneously visible.

4.3.3. *Finish.* Unless otherwise specified, luminescent (self-activating) material shall be applied to major graduations, numerals and pointers.

4.4. *Power variation.* All units shall properly function with ±15% variation in D. C. voltage and/or ±10% variation in A. C. voltage and frequency, provided the A. C. voltage and frequency vary in the same direction.

4.5. *Compensation provisions.* Means shall, if necessary, be provided for compensating for semi-circular deviation. Compensating effect shall not exceed 30 degrees in each direction for each axis when adjusted for maximum effect.

4.6. *Gyro caging provisions.* Unless the gyro assembly has unrestricted freedom of operation in the pitch and roll axes, means shall be provided for caging and/or releveling the gyro. Means shall be provided to indicate when the gyro is caged, except when it is not possible to leave the gyro in caged condition.

[1] Copies may be obtained from the Society of Automotive Engineers, 29 West Thirty-ninth Street, New York, N. Y.

4.7. *Synchronizing provisions.* Automatic or manual means shall be provided to bring the indicated heading into alignment with the magnetic heading. If manual synchronization is required, an indication of alignment shall be provided.

4.8. *Power indication.* Means shall be provided to permit the operation of a device to indicate whether the instrument is receiving power.

5. *Test conditions.*

5.1. *Atmospheric conditions.* Unless otherwise specified, all tests required by this specification shall be made at an atmospheric pressure of approximately 29.92 inches of mercury and at an ambient temperature of approximately 22° C. When tests are made with the atmospheric pressure or the temperature substantially different from these values, allowance shall be made for the variation from the specified conditions.

5.2. *Vibration (to minimize friction).* Unless otherwise specified, all tests for performance may be made with the instrument subjected to a vibration of 0.002 to 0.005 inch amplitude at a frequency of 1,500 to 2,000 cycles per minute. The term amplitude as used herein indicates the total displacement from positive maximum to negative maximum.

5.3. *Power.* Unless otherwise specified, all tests for performance shall be conducted at a power rating recommended by the manufacturer.

5.4. *Magnetic field strength.* Unless otherwise specified, all tests required by this specification shall be made with a horizontal field strength of approximately 0.18 gauss and a vertical field strength of approximately 0.54 gauss, in the direction normal in the northern hemisphere. When tests are made with field strength values substantially different from these values, allowance shall be made for variations from the specified tolerances.

5.5. *Position.* Unless otherwise specified, all tests shall be made with indicators and transmitters in normal level position.

5.6. *Compensators.* Unless otherwise specified, all tests shall be made with magnetic compensators removed or adjusted to neutral position.

5.7. *Vibration stand.* For vibration tests a stand shall be used which will vibrate at any desired frequency between 500 and 3,000 cycles per minute and shall subject the instrument to vibration such that a point on the instrument case will describe, in a plane inclined 45 degrees to the horizontal plane, a circle, the diameter of which is equal to the amplitude specified herein.

6. *Individual performance requirements.* All instruments, or components of such, shall be subjected to whatever tests the manufacturer deems necessary to demonstrate specific compliance with this specification, including the following requirements where applicable.

6.1. *Starting.*

6.1.1. *Potential.* The gyro shall start to rotate and continue to run on application of 50 percent of rated suction for air operated instruments and 80 of rated voltage for electrically operated instruments.

6.1.2. *Operation interval.* Rated performance shall be obtained within 3 minutes after the application of rated power.

6.2. *Scale error.* When the magnetic-sensitive unit is placed on magnetic headings at 30 degree intervals, starting from North, the indicated headings shall correspond to actual magnetic headings within 4 degrees.

6.3. *Heeling.* When the instrument is tilted 10 degrees about the roll or pitch axis and rotated 360 degrees in azimuth in 30 degree increments, the indicated headings shall not differ from the indicated headings with the instrument in normal level position by more than 4 degrees. The instrument shall remain at each heading for 5 minutes before reading.

6.4. *Compensation.* With the instrument on N heading and the magnetic compensator adjusted for minimum effect, the scale error with compensator shall not differ from the scale error without compensator by more than 2 degrees. The range of adjustable compensation effect shall not exceed 30 degrees in each direction for each axis.

When the instrument is placed on any cardinal heading and the opposite axis compensator adjusted for maximum effect, the indicated heading shall not change more than 2 degrees.

6.5. *Dielectric.* The insulation shall be subjected to a dielectric test with an R. M. S. voltage at a commercial frequency applied for a period of five seconds equivalent to five times normal circuit operating voltage except where circuits include components for which such a test would be inappropriate the test voltage shall be 1.25 times normal circuit operating voltage. The insulation resistance shall not be less than 20 megohms at that voltage.

7. *Qualification tests.* As many instruments as deemed necessary to demonstrate that all instruments will comply with the requirements of this section shall be tested in accordance with the manufacturer's recommendations.

7.1. *Low temperature.* The instrument, or components, shall be subjected to the temperatures indicated in the following table in accordance with their location in the aircraft. After exposure to these temperatures for 5 hours, rated performance shall be obtained in 15 minutes after application of rated power using the magnetic field strength specified in section 5.4 except the field strength tolerance shall be ±20%.

Instrument location:	*Temperature*
Heated area (temperature controlled)	−30° C.
Unheated area (temperature uncontrolled)	−55° C.

7.2. *High temperature.* The requirements of section 7.1 shall apply except that the exposure temperatures shall be 50° C. for heated areas and 70° C. for unheated areas and rated performance shall be obtained in 3 minutes after application of rated power.

7.3. *Extreme temperature exposure.* The instrument, or components, shall, after alternate exposures to ambient temperatures of −65° C. and 70° C. for periods of 24 hours each and a delay of 3 hours at room temperature following completion of the exposure, meet the requirements of sections 6.1 and 6.2. There shall be no evidence of damage as a result of exposure to the extreme temperatures specified herein.

7.4. *Magnetic effect.* The magnetic effect of the indicator shall be determined in terms of the deflection of a free magnet, approximately 1½ inches long, in a magnetic field with a horizontal intensity of 0.18 (±0.01) gauss when the indicator is held in various positions on an east-west line with its nearest part 12 inches from the center of the magnet. This test shall first be made with the indicator not operating and then shall be repeated with the indicator in normal operation. The maximum deflection of the free magnet shall not exceed 5 degrees for any pointer or dial position.

7.5. *Humidity.* The instrument shall be operated under the extreme condition specified in section 3.4.2 for a period of 10 hours after which it shall meet the requirements of sections 6.1 and 6.2.

7.6. *Vibration.* The instrument(s) shall be subjected, while in normal operation, to vibration with an amplitude of 0.010 inch at frequencies from 1,000 to 3,000 cycles per minute in order to determine whether the natural frequency of the instrument(s) is in this frequency range. While the instrument is being vibrated, the maximum range of the indicator dial (or pointer) oscillation shall not exceed 2 degrees and the maximum difference in mean indicated heading with and without vibration shall not exceed 2 degrees. After 3 hours exposure to vibration amplitudes as specified in section 3.4.4 and at the natural frequency of between 1,000 and 3,000 c. p. m., otherwise at 2,000 c. p. m., the instrument(s) shall meet the requirements of section 6.1, 6.2 and 6.3. Those components normally intended for shock mounting shall be subjected to a vibration having only 0.005 inch amplitude. No damage shall be evident after this test.

7.7. *Field strength variation.* With transmitter at a total field of 0.57±0.02 gauss at a dip angle of 72 degrees ±1 degree and the compass at a null, the null shall not vary more than ±2 degrees when the dip angle is changed to 89 degrees ±1 degree.

7.8. *Turn error.* The scale error resulting from a coordinated turn of 180 degrees in one minute at a true air speed of 180 miles per hour shall be within 2 degrees 2 minutes after recumption of straight and level flight. The error shall have been obtained from a turn which was begun from an easterly heading.

Application. Stabilized magnetic direction indicators complying with the specifications appearing in this Technical Standard Order are hereby approved for all aircraft. Stabilized magnetic direction indicators already approved by the Administrator may continue to be installed in aircraft:

(1) For which an application for original type certificate is made prior to the effective date of this order,

(2) The prototype of which is flown within one year after the effective date of this order, and

(3) The prototype of which is not flown within one year after the effective date of this order if due to causes beyond the applicant's control.

If a major change is made in the installation within nine months after the effective date of this order involving a change in type or model of stabilized magnetic direction indicator, previously approved types of stabilized magnetic direction indicators may be installed. However, in any such change made after the nine month period, new types of stabilized magnetic direction indicators installed in aircraft used in instrument flight shall meet the specifications contained herein.

SPECIFIC INSTRUCTIONS

Marking. In addition to the identification information required in the referenced specification, each stabilized magnetic direction indicator shall be permanently marked with the Technical Standard Order designation, CAA-TSO-C6 to identify the stabilized magnetic direction indicator as meeting the requirements of this order in accordance with the manufacturers' statement of conformance outlined below. This identification will be accepted by the Civil Aeronautics Administration as evidence that the established minimum safety requirements for stabilized magnetic direction indicators have been met.

Data requirements. None.

Effective date. After July 1, 1948, specifications contained in this Technical Standard Order will constitute the basis for Civil Aeronautics Administration approval of stabilized magnetic direction indicators for use in certificated aircraft used in instrument flight.

Deviations. Requests for deviation from, or waiver of, the requirements of this order, which affect the basic airworthiness of the component, should be submitted for approval by the Director, Aircraft and Components Service, Office of Safety Regulation, Civil Aeronautics Administration. These requests should be addressed to the nearest Regional Office of the Civil Aeronautics Administration, Attn: Superintendent, Aircraft and Components Branch.

Conformance. The manufacturer shall furnish to the CAA, Aircraft and Components Service, A-298, Washington, D. C., a written statement of conformance signed by a responsible official of his company, setting forth that the stabilized magnetic direction indicator to be produced by him meets the minimum safety requirements established in this order. Immediately thereafter distribution of the stabilized magnetic direction indicator conforming with the terms of this order may be started and continued.

The prescribed identification on the stabilized magnetic direction indicator does not relieve the aircraft manufacturer or owner of responsibility for the proper application of the stabilized magnetic direction indicator in his aircraft, nor waive any of the requirements concerning type certification of the aircraft in accordance with existing Civil Air Regulations.

If complaints of nonconformance with the requirements of this order are brought to the attention of the Civil Aeronautics Administration, and investigation indicated that such complaints are justified, the Administrator will take appropriate action to restrict the use of the product involved.

Copies of this Technical Standard Order and other Technical Standard Orders may be obtained from the Civil Aeronautics Administration, Aviation Information Staff, Washington 25, D. C.

[Technical Standard Order C7a]

DIRECTION INDICATOR, MAGNETIC, NON-STABILIZED TYPE (MAGNETIC COMPASS)

Introduction. Non-stabilized magnetic direction indicators are in the class of aircraft components which the Administrator of Civil Aeronautics is authorized to approve in accordance with Parts 03, 04, and 06 of the Civil Air Regulations.

This Technical Standard Order is intended to serve as a criterion by which the product manufacturer can obtain Civil Aeronautics Administration approval of his non-stabilized magnetic direction indicator.

In the establishment of this Technical Standard Order, consideration has been given to existing Government and industry standards for non-stabilized magnetic direction indicators for the purpose of adopting the performance requirements of one of the recognized aeronautical standards as the minimum safety requirements for non-stabilized magnetic direction indicators which are intended for use in civil aircraft. The specification of the Society of Automotive Engineers for non-stabilized magnetic direction indicators contains such requirements.

DIRECTIVE

Provision. Pursuant to §§ 03.06, 03.5, 04a.07, 04a.5, 04b.05, 04b.5, 06.05, and 06.5 of the Civil Air Regulations, which authorize the Administrator to approve aircraft equipment, the performance requirements for non-stabilized magnetic direction indicators as set forth in SAE Specification AS-398, Direction Indicator, Magnetic, Non-Stabilized Type, dated July 1, 1947,[1] stated below, are hereby established as minimum safety requirements for non-stabilized magnetic direction indicators which are intended for use in civil aircraft:

1. *Purpose.* To specify minimum requirements for non-stabilized magnetic direction indicators for use in aircraft, the operation of which may subject the instrument to the environmental conditions specified in section 3.4.

2. *Scope.* This specification covers two basic types as follows:

Type I. Direct reading.

Type II. Remote indicating.

3. *General requirements.*

3.1. *Material and workmanship.*

3.1.1. *Materials.* Materials shall be of a quality which experience and/or tests have demonstrated to be suitable and dependable for use in aircraft instruments.

3.1.2. *Workmanship.* Workmanship shall be consistent with high-grade aircraft instrument manufacturing practice.

3.2. *Radio interference.* The instrument shall not be the source of objectionable interference, under operating conditions at any frequencies used on aircraft, either by radiation or feed-back, in radio sets installed in the same aircraft as the instrument.

3.3. *Identification.* The following information shall be legible and permanently marked on each unit or attached thereto:

(a) Name of instrument.

(b) SAE specification AS 398.

(c) Rating (electrical, vacuum, etc.).

(d) Manufacturer's part number.

(e) Manufacturer's serial number or date of manufacture.

(f) Manufacturer's name and/or trademark.

3.4. *Environmental conditions.* The following conditions have been established as design criteria only. Tests shall be conducted as specified in sections 5, 6 and 7.

3.4.1. *Temperature.* When installed in accordance with the instrument manufacturer's instructions, the instrument shall function over the range of ambient temperature indicated below and shall not be adversely affected by exposure to temperature in the range −65° C to +70° C.

Type I indicator..... −30° C. to +50° C.
Type II indicator..... −30° C. to +50° C.
Type II transmitter..... −55° C. to +70° C.

3.4.2. *Humidity.* The instrument shall function and not be adversely affected when exposed to a relative humidity up to and including 95% at a temperature of approximately 32° C.

3.4.3. *Altitude.* The instrument shall function and not be adversely affected when subjected to a pressure range equivalent to −1,000 to +40,000 feet standard altitude.

3.4.4. *Vibration.* When installed in accordance with the instrument manufacturer's instructions, the instrument shall function and shall not be adversely affected when subjected to the following vibration:

Unit	Cycles per minute	Amplitude	Maximum acceleration
		Inch	
Type I indicator.....	500–3000	0.010	1.3 g
Type II indicator.....	500–3000	.010	1.3 g
Type II transmitter.....	500–3000	.030	3.8 g

NOTE: It is understood that the instrument shall withstand vibration at higher frequencies, but the acceleration values need not exceed those shown above.

When specified by the purchaser for use in rotary wing aircraft the frequency range shall be 150–3,000 cycles per minute.

4. *Detail requirements.*

4.1. *Indicating method.* One of the following methods of indication shall be employed:

Method I. Horizontal drum dial with fixed lubber's line. Graduations move to the right for right turns.

Method II. Rotating vertical dial with fixed lubber's line. Dial rotates counterclockwise for right turns.

Method III. Rotating pointer with fixed graduated dial. Pointer rotates clockwise for right turns. Dial position may be settable.

4.2. *Operating limits.* During straight flight the instrument shall indicate magnetic headings, throughout the 360 degree scale range, during dives, climbs or banks up to at least 20 degrees displacement from level flight.

4.3. *Dial markings.*

4.3.1. *Increments.* The indicators shall be provided with degree graduations at intervals not to exceed 5 degrees, with major graduations every 10 degrees and with numerical markings at intervals not greater than 30 degrees, except that the 0, 90, 180, and 270 degree positions shall be marked N, E, S, and W respectively.

4.3.2. *Visibility.* Index and dial markings shall be visible from any point within the frustum of a cone the side of which makes an angle of 30 degrees with the perpendicular to the dial and the small diameter of which is the aperture of the instrument case. At least two numerals shall be simultaneously visible.

4.3.3. *Finish.* Unless otherwise specified, luminescent material (self activating) shall be applied to major graduations, numerals and pointers.

4.4. *Power variations.* All units shall properly function with ±15% variation in D. C. voltage and/or ±10% variation in A. C. voltage and frequency, provided the A. C. voltage and frequency vary in the same direction.

4.5. *Compensation provisions.* Means shall be provided for compensating for semi-circular deviation. Compensating effect shall be between 15 and 30 degrees in each direction for each axis when adjusted for maximum effect.

5. *Test conditions.*

5.1. *Atmospheric conditions.* Unless otherwise specified, all tests required by this specification shall be made at an atmospheric pressure of approximately 29.92 inches of mercury and at an ambient temperature of approximately 22° C. When tests are made with the atmospheric pressure or the temperature substantially different from these values, allowance shall be made for the variation from the specified conditions.

5.2. *Vibration (to minimize friction).* Unless otherwise specified all test for performance may be made with the instrument subjected to a vibration of 0.002 to 0.005 inch amplitude at a frequency of 1,500 to 2,000 cycles per minute. The term amplitude as used herein indicates the total displacement from positive maximum to negative maximum.

5.3. *Power.* Unless otherwise specified, all tests for performance shall be conducted at the power rating recommended by the manufacturer.

5.4. *Magnetic field strength.* Unless otherwise specified all tests required by this specification shall be made with a horizontal field strength of approximately 0.18 gauss and a vertical field strength of approximately 0.54 gauss, in the direction normal in the northern hemisphere. When tests are made with field strength values substantially different from these values, allowances shall be made for variations from the specified tolerances.

5.5. *Position.* Unless otherwise specified all tests shall be made with indicators and transmitters in normal level position.

5.6. *Compensators.* Unless otherwise specified all tests shall be made with compensators removed or adjusted to neutral position.

5.7. *Vibration stand.* For vibration tests a stand shall be used which will vibrate at any desired frequency between 500 and 3,000 cycles per minute and shall subject the instrument to vibration such that a point on the instrument case will describe, in a plane inclined 45 degrees to the horizontal plane, a circle, the diameter of which is equal to the amplitude specified herein.

6. *Individual performance requirements.* All instruments, or components of such, shall be subjected to whatever tests the manufacturer thereof deems necessary to demonstrate specific compliance with this specification including the following requirements where applicable.

6.1. *Leakage.* Liquid-filled indicators or transmitters shall not show evidence of leakage after having been placed in a bell jar and subjected to a pressure equivalent to

[1] Copies may be obtained from the Society of Automotive Engineers, 29 West Thirty-ninth Street, New York, N. Y.

40,000 feet standard altitude for a period of 1 hour.

6.2. *Scale error.* When the magnetic-sensitive unit is placed on magnetic headings at 30 degree intervals starting from North the indicated headings shall correspond to actual magnetic headings within 4 degrees.

6.3. *Friction.* When the magnetic element has been deflected 5 degrees first to right and then to left, from its equilibrium position and then allowed to come to rest, the difference between the two indicator readings at rest shall not exceed 1 degree.

6.4. *Damping.* When the magnetic element has been deflected 30 degrees, first to the right and to the left, from its equilibrium position, the time required for the indicator dial (or pointer) to pass through the 25 degree angle toward the original indicated heading shall not exceed 5.0 seconds or be less than 1.0 second. The maximum overswing past the original indicated heading shall not exceed 15 degrees.

6.5. *Heeling error.* When the magnetic-sensitive unit is tilted 20 degrees from the normal level position and magnetic element shall be free to rotate through 360 degrees. When the unit is tilted 10 degrees the indicated heading shall not differ from the indicated heading with the magnetic-sensitive unit in normal level position by more than 4 degrees. The indicator dial (or pointer) shall still be visible as specified in section 4.3.2.

6.6. *Swirl.* When the magnetic-sensitive unit is tilted 20 degrees from normal and rotated in azimuth, at a rate of 30 degrees per second, through 360 degrees, stopping at N, S, E, and W indication, the overswing of the indicator dial (or pointer) at each of these points shall not exceed 6 degrees.

6.7. *Compensation.* With the magnetic-sensitive unit on N heading and the compensator adjusted for minimum effect, the scale error with the compensator shall not differ from the scale error without compensator by more than 2 degrees. The range of adjustable compensation effect shall be between 15 and 30 degrees in each direction for each axis.

When the magnetic-sensitive unit is placed on any cardinal heading and the opposite axis compensator adjusted for maximum effect the indicated heading shall not change more than 2 degrees.

6.8. *Dielectric.* The insulation shall be subjected to a dielectric test with an R. M. S. voltage at a commercial frequency applied for a period of five seconds equivalent to five times normal circuit operating voltage except where circuits include components for which such a test would be inappropriate the test voltage shall be 1.25 times normal circuit operating voltage. The insulation resistance shall not be less than 20 megohms at that voltage.

7. *Qualification tests.* As many instruments as deemed necessary to demonstrate that all instruments will comply with the requirements of this section shall be tested in accordance with the manufacturer's recommendations.

7.1. *Low temperature.* The instruments, or components, shall be subjected to the temperatures indicated in the following table in accordance with their location in the aircraft. After exposure to these temperatures for 5 hours, rated performance shall be obtained in 15 minutes after application of rated power using the magnetic field strength specified in section 5.4 except the field strength tolerance shall be ±20%.

Instrument location:	*Temperature*
Heated area (temperature controlled)	−30° C.
Unheated area (temperature uncontrolled)	−55° C.

7.2. *High temperature.* The requirements of section 7.1 shall apply except that the exposure temperatures shall be 50° C. for heated areas and 70° C. for unheated areas and rated performance shall be obtained in 3 minutes after application of rated power.

7.3. *Extreme temperature exposure.* The instrument, or components, shall, after alternate exposures to ambient temperatures of −65° C. and 70° C. for periods of 24 hours each and a delay of 3 hours at room temperature following completion of the exposure, meet the requirements of section 6.1 and 6.2. There shall be no evidence of damage as a result of exposure to the extreme temperatures specified herein.

7.4. *Magnetic effect.* The magnetic effect of the Type II indicator shall be determined in terms of the deflection of a free magnet, approximately 1½ inches long, in a magnetic field with a horizontal intensity of 0.18 (±0.01) gauss when the indicator is held in various positions on an east-west line with its nearest part 5 inches from the center of the magnet. This test shall first be made with the indicator not operating and then shall be repeated with the indicator in normal operation. The maximum deflection of the free magnet shall not exceed 2 degrees for any pointer or dial position.

7.5. *Humidity.* The instrument shall be operated under the extreme conditions specified in section 3.4.2 for a period of 10 hours after which it shall meet the requirements of sections 6.2 and 6.3.

7.6. *Vibration.* The instrument(s) shall be subjected, while in normal operation to vibration with an amplitude of 0.010 inch at frequencies from 1,000 to 3,000 cycles per minute in order to determine whether the natural frequency of the instrument(s) is in this frequency range. While the instrument is being vibrated, the maximum range of the indicator dial (or pointer) oscillation shall not exceed 3 degrees, and the maximum difference in mean indicated heading with and without vibration, shall not exceed 3 degrees. After 3 hours exposure to vibration amplitudes as specified in section 3.4.4 and at the natural frequency if between 1,000 and 3,000 c. p. m., otherwise at 2,000 c. p. m., the instrument(s) shall meet the requirements of section 6.1, 6.2 and 6.3. Those components normally intended for shock mounting shall be subjected to a vibration having only 0.005 inch amplitude. No damage shall be evident after this test.

Application. Non-stabilized magnetic direction indicators complying with the specifications appearing in this Technical Standard Order are hereby approved for all aircraft. Non-stabilized magnetic direction indicators already approved by the Administrator may continue to be installed in aircraft:

(1) For which an application for original type certificate is made prior to the effective date of this order,

(2) The prototype of which is flown within one year after the effective date of this order, and

(3) The prototype of which is not flown within one year after the effective date of this order if due to causes beyond the applicant's control.

If a major change is made in the installation within nine months after the effective date of this Order involving a change in type or model of non-stabilized magnetic direction indicator, previously approved types of non-stabilized magnetic direction indicators may be installed. However, in any such change made after the nine month period, new types of non-stabilized magnetic direction indicators installed in aircraft used in instrument flight shall meet the specifications contained herein.

SPECIFIC INSTRUCTIONS

Marking. In addition to the identification information required in the referenced specification, each non-stabilized magnetic direction indicator shall be permanently marked with the Technical Standard Order designation, CAA-TSO-C7 to identify the non-stabilized magnetic direction indicator as meeting the requirements of this Order in accordance with the manufacturers' statement of conformance outlined below. This identification will be accepted by the Civil Aeronautics Administration as evidence that the established minimum safety requirements for non-stabilized magnetic direction indicators have been met.

Data requirements. None.

Effective date. After July 1, 1948, specifications contained in this Technical Standard Order will constitute the basis for Civil Aeronautics Administration approval of non-stabilized magnetic direction indicators for use in certificated aircraft used in instrument flight.

Deviations. Requests for deviation from, or waiver of, the requirements of this Order, which affect the basic airworthiness of the component, should be submitted for approval by the Director, Aircraft and Components Service, Office of Safety Regulation, Civil Aeronautics Administration. These requests should be addressed to the nearest Regional Office of the Civil Aeronautics Administration, Attn: Superintendent, Aircraft and Components Branch.

Conformance. The manufacturer shall furnish to the CAA, Aircraft and Components Service, A-233, Washington, D. C., a written statement of conformance signed by a responsible official of his company, setting forth that the non-stabilized magnetic direction indicator to be produced by him meets the minimum safety requirements established in this order. Immediately thereafter distribution of the non-stabilized magnetic direction indicator conforming with the terms of this order may be started and continued.

The prescribed identification on the non-stabilized magnetic direction indicator does not relieve the aircraft manufacturer or owner of responsibility for the proper application of the non-stabilized magnetic direction indicator in his aircraft, nor waive any of the requirements concerning type certification of the aircraft in accordance with existing Civil Air Regulations.

If complaints of nonconformance with the requirements of this order are brought to the attention of the Civil Aeronautics Administration, and investigation indicates that such complaints are justified, the Administrator will take appropriate action to restrict the use of the product involved.

Copies of this Technical Standard Order and other Technical Standard Orders may be obtained from the Civil Aeronautics Administration, Aviation Information Staff, Washington 25, D. C.

[Technical Standard Order C8a]

CLIMB INDICATOR, PRESSURE ACTUATED (VERTICAL SPEED INDICATOR)

Introduction. Climb indicators are in the class of aircraft components which the Administrator of Civil Aeronautics is authorized to approve in accordance with Parts 03, 04, and 08 of the Civil Air Regulations.

This Technical Standard Order is intended to serve as a criterion by which the product manufacturer can obtain Civil Aeronautics Administration approval of his climb indicator.

In the establishment of this Technical Standard Order, consideration has been given to existing Government and industry standards for climb indicators for the purpose of adopting the performance requirements of one of the recognized aeronautical standards as the minimum safety requirements for climb indicators which are intended for use in civil aircraft. The specification of the Society of Automotive Engineers for climb indicators contains such requirements.

DIRECTIVE

Provision. Pursuant to §§ 03.03, 03.5, 04a.07, 04a.5, 04b.03, 04b.5, 08.05, and 08.5 of the Civil Air Regulations, which authorize

the Administrator to approve aircraft equipment, the performance requirements for climb indicators as set forth in SAE Specification AS-394, Climb Indicator, dated August 1, 1947,[1] stated below, are hereby established as minimum safety requirements for climb indicators which are intended for use in civil aircraft:

1. *Purpose.* To specify minimum requirements for pressure actuated climb indicators for use in aircraft, the operation of which may subject the instrument to environmental conditions specified in section 3.4.

2. *Scope.* This specification covers three types as follows:

Type I. Range 0–2,000 feet per minute climb and descent.

Type II. Range 0–4,000 feet per minute climb and descent.

Type III. Range 0–6,000 feet per minute climb and descent.

3. *General requirements.*

3.1. *Materials and workmanship.*

3.1.1. *Materials.* Materials shall be of a quality which experience or tests have demonstrated to be suitable and dependable for use in aircraft instruments.

3.1.2. *Workmanship.* Workmanship shall be consistent with high-grade aircraft instrument manufacturing practice.

3.2. *Identification.* The following information shall be legibly and permanently marked on the units or attached thereto:

(a) Name of instrument.
(b) SAE Spec. 394.
(c) Manufacturer's part number.
(d) Manufacturer's serial number or date of manufacture.
(e) Manufacturer's name and/or trademark.

3.3. *Environmental conditions.* The following conditions have been established as design criteria only. Tests shall be conducted as specified in sections 5, 6, and 7.

3.3.1. *Temperature.* When the instruments are mounted in accordance with manufacturer's instructions, they shall function over the range of ambient temperatures of −30° C. to 50° C. and shall not be adversely affected by exposure to temperatures of −65° C. to 70° C.

3.3.2. *Humidity.* The units shall function and not be adversely affected when exposed to a relative humidity up to and including 95 percent at approximately 32° C.

3.3.3. *Vibration.* When the instruments are mounted in accordance with manufacturer's instructions, they shall function and shall not be adversely affected when subjected to the following vibration.

Frequency: 500–3,000 cycles per minute.
Amplitude: 0.010 inch.
Maximum acceleration 0.8 g.

NOTE: It is understood that the units shall withstand vibration at higher frequencies but the acceleration values need not exceed that shown above.

When specified by the purchaser for use in rotary wing aircraft, the frequency range shall be 150–3,000 cycles per minute.

3.3.4. *Altitude.* The units shall function and not be adversely affected when subjected to a pressure and temperature range equivalent to an altitude range of −1,000 feet to +50,000 feet except that the instrument temperature shall not be lower than −30° C.

4. *General requirements.*

4.1. *Indicating method.* Ascent shall be indicated by a clockwise rotation of the pointer from the zero at the 9 o'clock position. Descent shall be indicated by a counterclockwise rotation. Stops shall be incorporated to limit the pointer movement to not more than 178 degrees in each direction from zero.

4.2. *Dial markings.*

4.2.1. *Increments.* Markings may be provided as follows:

Type I. Markings at 100 ft/min intervals with major graduations at 500 ft/min intervals.

Types II and III. Markings at 100 ft/min intervals up to 2,000 ft/min with major graduations at 500 ft/min intervals.

4.2.2. *Finish.* Unless otherwise specified, luminescent material (self-activating) shall be applied to the pointer, major graduations and numerals.

4.2.3. *Name.* Instrument name or function it measures may be legibly indicated in the same finish as applied to the major graduations and numerals.

4.2.4. *Visibility.* Pointer and dial markings shall be visible from any point within the frustrum of a cone, the side of which makes an angle of 30 degrees with the perpendicular to the dial and the small diameter of which is the aperture of the instrument case. The distance between the dial and the cover glass shall be a practical minimum and shall not exceed 0.187 of an inch.

4.3. *Zero setting system.* If means for manually setting the pointer at zero is provided, it shall not be accessible in flight.

5. *Test conditions.*

5.1. *Atmospheric conditions.* Unless otherwise specified, all tests required by this specification shall be made at an atmospheric pressure of approximately 29.92 inches of mercury and at a temperature of approximately 22° C. When tests are made with the atmospheric pressure or the temperature substantially different from these values, allowance shall be made for the variation from the specified condition.

5.2. *Vibration (to minimize friction).* Unless otherwise specified, all tests for performance may be made with the instrument subjected to a vibration of 0.002 to 0.005 inch amplitude at a frequency of 1,500 to 2,000 cycles per minute. The term amplitude as used herein indicates the total displacement from positive maximum to negative maximum.

5.3. *Vibration stand.* A vibration stand shall be used which will vibrate at any desired frequency between 500 and 3,000 cycles per minute and shall subject the instrument to vibration such that a point on the instrument case will describe, in a plane inclined 45 degrees to the horizontal, a circle, the diameter of which is equal to the amplitude specified herein.

6. *Individual performance requirements.* All instruments shall be subjected to whatever tests the manufacturer deems necessary to demonstrate specific compliance with this specification including the following requirements where applicable.

6.1. *Zero setting range.* The range of movement of the pointer by means of the zero adjustment shall not be less than 400 feet per minute for the "Up" and "Down" position.

6.2. *Calibration.* When subjected to the rates of change of pressure indicated in Table I for the altitude intervals shown, the errors shall not exceed the tolerances specified.

6.3. *Leak.* A suction of 15 inches of mercury and a pressure of 10 inches of mercury shall not change by more than 0.1 inch of mercury in 10 seconds at each condition.

6.4. *Position error.* The change in pointer indication with change in instrument position shall not exceed 50 feet per minute.

7. *Qualification tests.* As many instruments as deemed necessary, to demonstrate that all instruments will comply with the requirements of this section, shall be tested in accordance with the manufacturers' recommendations.

7.1. *Low temperature.* The instrument shall be exposed to a temperature of −30° C. for 3 hours and while at this temperature shall be subjected to the rates of change of pressure indicated in Table II for the altitude intervals shown. The errors shall not exceed the tolerances specified in Table II.

7.2. *Extreme temperature exposure.* The instrument shall, after alternate exposures to ambient temperatures of −65° C. and +70° C. for periods of 24 hours each and delay of 3 hours at room temperature following completion of the exposure, meet the requirements of sections 6.2 and 6.3. There shall be no evidence of damage as a result of exposure to the extreme temperatures specified herein.

7.3. *Vibration.* The instrument shall be vibrated at 500 cycles per minute so that a point on the case will describe a circle of 0.003–0.005 inch diameter. The frequency shall be slowly increased to 3,000 cycles per minute and then slowly decreased to 500 cycles per minute, to determine whether the natural frequency of the instrument is in this range. The drift of the pointer shall not exceed 50 feet per minute and it shall not oscillate more than 50 feet per minute. After three hours exposure to the vibration amplitude specified in section 3.3.3 and at the natural frequency (if between 500 and 3,000 cycles per minute) or at 2,000 cycles per minute the instrument shall meet the requirements of section 6. No damage shall be evident after this test.

7.4. *Lag.* The natural lag of the instrument when checked between the following points shall be between 6 and 15 seconds.

Type I. 1,800—200 feet per minute.

Types II and III. 2,000—200 feet per minute.

7.5. *Overpressure.* After subjecting the instrument to rates of 20,000 feet per minute climb and 30,000 feet per minute descent, the pointer shall return to its original indication within 100 feet per minute.

7.6. *Magnetic effect.* The magnetic effect of the instrument shall be determined in terms of the deflection of a free magnet, approximately 1½ inches long, in a magnetic field with a horizontal intensity of 0.18 ±0.01 gauss, when the indicator is held in various positions on an east-west line with its nearest part five inches from the center of the magnet. (An aircraft compass with the compensating magnets removed therefrom may be used as the free magnet for this test.) The maximum deflection of the magnet shall not exceed one degree for any pointer deflection.

7.7. *Humidity.* After being subjected to the extreme conditions of section 3.3.2 for 10 hours, the instrument shall meet the requirements of section 6.

TABLE I—CALIBRATION (REFERENCE SECTION 6)

TYPE I (RANGE 0-2,000 FEET PER MINUTE)

Standard altitude test interval (feet)	Test point ascent and descent (feet per minute)	Tolerance (feet per minute)
Between 2,000 and 4,000	500	35
	1,000	75
	1,500	150
Between 15,000 and 17,000	1,500	200
Between 28,000 and 30,000	1,500	200

TYPES II AND III (RANGES 0-4,000 AND 0-6,000 FEET PER MINUTE)

Between 2,000 and 4,000	500	100
	1,000	200
	2,000	300
	3,000	[1]300
	4,000	400
	5,000	500
Between 15,000 and 17,000	2,000	[1]300
	4,000	400
Between 28,000 and 30,000	2,000	[1]300
	4,000	400

[1] Maximum test point for Type II.

[1] Copies may be obtained from the Society of Automotive Engineers, 29 West Thirty-ninth Street, New York, N. Y.

TABLE 2—LOW TEMPERATURE (REFERENCE SECTION 7.1)

TYPE I (RANGE 0–2,000 FEET PER MINUTE)

Standard altitude test interval (feet)	Test point ascent and descent (feet per minute)	Tolerance (feet per minute)
Between 2,000 and 4,000	1,500	200
Between 28,000 and 30,000	1,500	250

TYPES II–III (RANGE 0–4,000 AND 0–6,000 FEET PER MINUTE)

Between 2,000 and 4,000	2,000	[1]300
	4,000	400
Between 28,000 and 30,000	2,000	[1]300
	4,000	400

[1] Test point for Type II.

Application. Climb indicators complying with the specifications appearing in this Technical Standard Order are hereby approved for all aircraft. Climb indicators already approved by the Administrator may continue to be installed in aircraft.

(1) For which an application for original type certificate is made prior to the effective date of this order,

(2) The prototype of which is flown within one year after the effective date of this order, and

(3) The prototype of which is not flown within one year after the effective date of this order if due to causes beyond the applicant's control.

If a major change is made in the installation within nine months after the effective date of this order involving a change in type or model of climb indicator, previously approved types of climb indicators may be installed. However, in any such change made after the nine month period, new types of climb indicators installed in aircraft used in instrument flight shall meet the specifications contained herein.

SPECIFIC INSTRUCTIONS

Marking. In addition to the identification information required in the referenced specification, each climb indicator shall be permanently marked with the Technical Standard Order designation, CAA–TSO–C8 to identify the climb indicator as meeting the requirements of this Order in accordance with the manufacturers' statement of conformance outlined below. This identification will be accepted by the Civil Aeronautics Administration as evidence that the established minimum safety requirements for climb indicators have been met.

Data requirements. None.

Effective date. After July 1, 1948, specifications contained in this Technical Standard Order will constitute the basis for Civil Aeronautics Administration approval of climb indicators for use in certificated aircraft used in instrument flight.

Deviations. Requests for deviation from, or waiver of, the requirements of this order, which affect the basic airworthiness of the component, should be submitted for approval by the Director, Aircraft and Components Service, Office of Safety Regulation, Civil Aeronautics Administration. These requests should be addressed to the nearest Regional Office of the Civil Aeronautics Administration, Attn: Superintendent, Aircraft and Components Branch.

Conformance. The manufacturer shall furnish to the CAA, Aircraft and Components Service, A–298, Washington, D. C., a written statement of conformance signed by a responsible official of his company, setting forth that the climb indicator to be produced by him meets the minimum safety requirements established in this order. Immediately thereafter distribution of the climb indicator conforming with the terms of this Order may be started and continued.

The prescribed identification on the climb indicator does not relieve the aircraft manufacturer or owner of responsibility for the proper application of the climb indicator in his aircraft, nor waive any of the requirements concerning type certification of the aircraft in accordance with existing Civil Air Regulations.

If complaints of nonconformance with the requirements of this Order are brought to the attention of the Civil Aeronautics Administration, and investigation indicates that such complaints are justified, the Administrator will take appropriate action to restrict the use of the product involved.

Copies of this Technical Standard Order and other Technical Standard Orders may be obtained from the Civil Aeronautics Administration, Aviation Information Staff, Washington 25, D. C.

[Technical Standard Order C9a]

AUTOMATIC PILOT

Introduction. Automatic pilots are in the class of aircraft components which the Administrator of Civil Aeronautics is authorized to approve in accordance with Parts 03, 04, and 06 of the Civil Air Regulations.

This Technical Standard Order is intended to serve as a criterion by which the product manufacturer can obtain Civil Aeronautics Administration approval of his automatic pilot.

In the establishment of this Technical Standard Order, consideration has been given to existing Government and industry standards for automatic pilots for the purpose of adopting the performance requirements of one of the recognized aeronautical standards as the minimum safety requirements for automatic pilots which are intended for use in civil aircraft. The specification of the Society of Automotive Engineers for automatic pilots contains such requirements.

DIRECTIVE

Provision. Pursuant to Sections 03.05, 03.5, 04a.07, 04a.5, 04b.05, 04b.5, 06.05, and 06.5 of the Civil Air Regulations, which authorize the Administrator to approve aircraft equipment, the performance requirements for automatic pilots as set forth in SAE Specification AS–402, Automatic Pilot, dated August 1, 1947,[1] stated below, are hereby established as minimum safety requirements for automatic pilots which are intended for use in civil aircraft:

1. *Purpose.* To specify minimum requirements for automatic pilots for use in aircraft, the operation of which may subject the instruments to the environmental conditions specified in section 3.4.

2. *Scope.* This specification covers all gyroscopic and servo control types of automatic pilots intended for use on aircraft to operate automatically the control surfaces of the aircraft to maintain a stabilized flight attitude with respect to the longitudinal, lateral and vertical axes, and to provide for maneuvering the airplane through servo control.

3. *General requirements.*

3.1. *Material and workmanship.*

3.1.1. *Materials.* Materials shall be of a quality which experience and/or tests have demonstrated to be suitable and dependable for aircraft instruments.

3.1.2. *Workmanship.* Workmanship shall be consistent with high grade aircraft instrument manufacturing practice.

3.2. *Radio interference.* The instrument shall not be the source of objectionable interference under operating conditions at any frequencies used on aircraft, either by radiation or feedback, in radio sets installed in the same aircraft as the instrument.

[1] Copies may be obtained from the Society of Automotive Engineers, 29 West Thirty-ninth Street, New York, N. Y.

3.3. *Identification.* The following information shall be legibly and permanently marked on each of the major components or attached thereto.

(a) Name of the unit and type of automatic pilot.

(b) SAE Spec. AS 402.

(c) Rating (electrical or vacuum power supply and maximum servo output where applicable).

(d) Manufacturer's part number.

(e) Manufacturer's serial number or date of manufacture.

(f) Manufacturer's name and/or trademark.

3.4. *Environmental conditions.* The following conditions have been established as design criteria only. Tests shall be conducted as specified in sections 5, 6, and 7.

3.4.1. *Temperature.* When located in accordance with the instrument manufacturer's instruction, the units shall function over the range of ambient temperatures as listed in column A below and shall not be adversely affected by exposure to the temperature shown in column B below:

Instrument location	A	B
Power plant accessory compartment	−20° to 120° C.	−65° to 120° C.
Heated areas (temperature controlled)	−20° to 50° C.	−65° to 70° C.
Unheated areas (temperature uncontrolled)	−55° to 70° C.	−65° to 70° C.

3.4.2. *Humidity.* All units shall function and not be adversely affected when exposed to a relative humidity up to and including 95 percent at a temperature of approximately 32° C.

3.4.3. *Altitude.* All units shall function and not be adversely affected when exposed to a pressure and temperature range equivalent to −1,000 feet to 40,000 feet standard altitude, except as limited by application of section 3.4.1.

3.4.4. *Vibration.* When installed in accordance with instrument manufacturer's instructions, all units shall function and shall not be adversely affected when subjected to vibrations having characteristics likely to be encountered at the locations in the aircraft where the units are to be installed.

4. *Detail requirements.*

4.1. *Instrumentation.*

4.1.1. *Direction indication.* If aircraft direction indication is provided it shall be in accordance with AS 397 or AS 399.

4.1.2. *Bank and pitch indication.* If aircraft bank and/or pitch indication is provided it shall be in accordance with AS 396.

4.1.3. *Servo signal indication.* Means shall be provided to clearly indicate the magnitude and direction of servo signal present, except where automatic synchronization is provided. Then, yaw and roll signal need not be indicated. With the automatic pilot engaged, the pitch axis indication shall be representative of control surface load.

4.1.4. *Engagement indication.* Means shall be provided to clearly indicate whether the automatic pilot servos are in the engaged or disengaged position.

4.1.5. *System power indication.* Means shall be provided to permit operation of a device to indicate whether or not the instrument is receiving power.

4.1.6. *Servo power indication.* Means shall be provided to indicate when the servos are engaged but are not energized if such condition is possible.

4.1.7. *Caging indication.* Means shall be provided to indicate when the gyros are caged, except where it is not possible to leave them in a caged condition.

4.1.8. *Interlock indication.* The operation of any protective interlock device which renders any part of the system inoperative shall be indicated.

4.2. *Control range.*

4.2.1. *Corrective control.* The automatic pilot shall give stabilized control about the three axes throughout the following minimum ranges:

(a) Pitch ±50°

(b) Roll ±75°

(c) Yaw ±20°

4.2.2. *Command control.* Means shall be provided to limit maneuvering the airplane, through the automatic pilot controls, to the following maximum ranges:

(a) Pitch ±30°

(b) Bank ±45°

(c) Turn=unlimited angle to the right or left.

4.3. *On-off control.* Means shall be provided, either electrical or mechanical, to permit the automatic pilot to be put in operation and to remove it from operation.

4.4. *Safety provisions.*

4.4.1. *Servo force.* Means shall be provided to limit the servo force to a safe value as determined in specific applications. The mounting base and housing of the servos shall be designed to withstand a load of 1.5 times the maximum output of the servo applied in a manner similar to that found in actual installation.

4.4.2. *Interlock provisions.* A means shall be provided to prevent the servo system from becoming operative until the automatic pilot is ready for operation.

4.4.3. *Indicator power source.* When the pitch and bank and/or azimuth units furnish an indicating reference, either directly or by repeaters, the automatic pilot shall be so designed that they become operative simultaneously with the turning on of the aircraft power source.

4.4.4. *Special features.* When special features are incorporated in the design of the automatic pilot (either integral or as accessories) they shall provide adequate interlocks, electrical and/or mechanical to prevent improper operation. For example:

(a) Coordinated turn control. Bank shall be limited.

(b) Altitude control. Pitch attitude correction shall be limited.

(c) Glide path control. Pitch attitude correction shall be limited.

4.4.5. *Servo disengaging means.* A positive mechanical means, independent of the aircraft power supply, shall be provided to disengage the servos from the aircraft control system. When the servos are disengaged, the manual control of the aircraft shall not be objectionably affected.

4.4.6. *Emergency release.* Means shall be provided for releasing the automatic control. The actuating device shall be suitable for mounting on the control wheel.

4.4.7. *Reliability.* Insofar as practicable, without affecting its normal operation, the automatic pilot design shall be such that should a failure occur in the system, no signal shall occur which would apply hazardous control to the airplane.

4.5. *Stability.* The roll, pitch and yaw signal sources shall establish the three axes about which the airplane is automatically controlled. The automatic pilot shall provide flight attitude stabilization, in smooth air, within 1 degree of selected attitude and heading about the above reference axes.

4.6. *Power variations.* All units shall properly function with a voltage and frequency variation of ±10% of the rated value (provided the A. C. voltage and frequency vary in the same direction), and/or ±30% of the rated vacuum or hydraulic pressure. Power variations beyond these limits shall not cause adverse control.

5. *Test Conditions.*

5.1. *Atmospheric conditions.* Unless otherwise specified, the tests shall be accomplished at atmospheric pressure of approximately 29.92 inches of mercury and at an ambient temperature of approximately 22° C. When tests are made with atmospheric pressure or temperature substantially different from these values, allowance shall be made for the difference from the specified conditions.

5.2. *Vibration (to minimize friction).* Unless otherwise specified, all tests for performance may be made with the instrument subjected to a vibration of 0.002 to 0.005 inch amplitude at a frequency of 1,500 to 2,000 cycles per minute. The term amplitude as used herein indicates the total displacement from positive maximum to negative maximum.

5.3. *Power conditions.* Unless otherwise specified all tests for performance shall be conducted at the power rating recommended by the manufacturer.

5.4. *Vibration stand.* A vibration stand shall be used which will vibrate at any desired frequency between 500 and 3,000 cycles per minute and shall subject the instrument to vibration such that a point on the instrument case will describe in a plane inclined 45 degrees to the horizontal plane, a circle, the diameter of which is equal to the amplitude specified herein.

6. *Individual performance tests.* All of the various units or complete system shall be tested in accordance with the manufacturer's recommendations. The manufacturer shall conduct sufficient tests to prove compliance with this specification, including the following requirements where applicable.

6.1. *Dielectric.* Insulation shall be subjected to a dielectric test with a R. M. S. voltage at a commercial frequency applied for a period of five seconds equivalent to five times normal circuit operating voltage except where circuits include condensers or other components for which such a test would be inappropriate; then the test voltage shall be 1.25 times circuit operating voltage. The insulation resistance shall not be less than 20 megohms at that voltage.

7. *Qualification tests.* As many instruments or components as deemed necessary to demonstrate that all instruments will comply with the requirements of this section shall be tested in accordance with the manufacturer's recommendations.

7.1. *Low temperature operation.* Each component, or the complete system, after having been subjected to an ambient temperature of −30° C. or −55° C. as applicable (see par. 3.4.1) for a period of 5 hours, without operating, shall then meet the requirements of section 6 at that temperature.

7.2. *High temperature.* The requirements of section 7.1 shall apply except that the exposure temperature shall be 50° C., 70° C., or 130° C. as applicable (see par. 3.4.1).

7.3. *Extreme temperature exposure.* The instrument or components shall, after alternate exposures to ambient temperatures of −65° C. and 70° C. or −65° C. and 130° C. as applicable (see par. 3.4.1) for periods of 24 hours each and a delay of 3 hours following completion of the exposure, meet the requirements of section 6 at room temperature. There shall be no evidence of damage as a result of exposure to the extreme temperature specified herein.

7.4. *Magnetic effect.* Magnetic effect of the controller and all indicators shall be determined in terms of the deflection of a free magnet approximately 1½ inches long, in a magnetic field with a horizontal intensity of 0.18 (±.01) gauss when the units are held in various positions on an east-west line 12 inches from the center of the magnet. The maximum deflection of the magnet shall not exceed five degrees. Tests shall be made with instruments in power-on condition.

7.5. *Humidity.* The instrument shall be operated under the extreme condition specified in section 3.4.2 for a period of 10 hours after which it shall meet the requirements of section 6.

7.6. *Vibration.* The components shall be subjected to vibration with amplitudes of 0.005" to 0.063" as specified by the manufacturer at frequencies from 1,000 to 3,000 cycles per minute in order to determine that the natural frequency of the components does not lie in this frequency range. After three hours exposure to a vibration test recommended by the manufacturer, as per section 3.4.4, the instrument shall meet the requirements of section 6.

Application. Automatic pilots complying with the specifications appearing in this Technical Standard Order are hereby approved for all aircraft. Automatic pilots already approved by the Administrator may continue to be installed in aircraft:

(1) For which an application for original type certificate is made prior to the effective date of this order,

(2) The prototype of which is flown within one year after the effective date of this order, and

(3) The prototype of which is not flown within one year after the effective date of this order if due to causes beyond the applicant's control.

If a major change is made in the installation within nine months after the effective date of this order involving a change in type or model of automatic pilot, previously approved types of automatic pilots may be installed. However, in any such change made after the nine month period, new types of automatic pilots installed in aircraft used in instrument flight shall meet the specifications contained herein.

SPECIFIC INSTRUCTIONS

Marking. In addition to the identification information required in the referenced specification, each automatic pilot shall be permanently marked with the Technical Standard Order designation, CAA-TSO-C9 to identify the automatic pilot as meeting the requirements of this Order in accordance with the manufacturers' statement of conformance outlined below. This identification will be accepted by the Civil Aeronautics Administration as evidence that the established minimum safety requirements for automatic pilots have been met.

Data requirements. None.

Effective date. After July 1, 1948, specifications contained in this Technical Standard Order will constitute the basis for Civil Aeronautics Administration approval of automatic pilots for use in certificated aircraft used in instrument flight.

Deviations. Requests for deviation from, or waiver of, the requirements of this Order, which affect the basic airworthiness of the component, should be submitted for approval by the Director, Aircraft and Components Service, Office of Safety Regulation, Civil Aeronautics Administration. These requests should be addressed to the nearest Regional Office of the Civil Aeronautics Administration, Attn: Superintendent, Aircraft and Components Branch.

Conformance. The manufacturer shall furnish to the CAA, Aircraft and Components Service, A-298, Washington, D. C., a written statement of conformance signed by a responsible official of his company, setting forth that the automatic pilot to be produced by him meets the minimum safety requirements established in this Order. Immediately thereafter distribution of the automatic pilot conforming with the terms of this Order may be started and continued.

The prescribed identification on the automatic pilot does not relieve the aircraft manufacturer or owner of responsibility for the proper application of the automatic pilot in his aircraft, nor waive any of the requirements concerning type certification of the aircraft in accordance with existing Civil Air Regulations.

If complaints of nonconformance with the requirements of this Order are brought to the attention of the Civil Aeronautics Administration, and investigation indicates that such complaints are justified, the Administrator will take appropriate action to restrict the use of the product involved.

Copies of this Technical Standard Order and other Technical Standard Orders may be obtained from the Civil Aeronautics Administration, Aviation Information Staff, Washington 25, D. C.

[Technical Standard Order C11]

FIRE DETECTORS

Introduction. Fire detectors are in the class of aircraft components which the Administrator of Civil Aeronautics is authorized to approved in accordance with Parts 04a and 04b of the Civil Air Regulations.

This Technical Standard Order is intended to serve as a criterion by which the product manufacturer can obtain Civil Aeronautics Administration approval of his fire detector.

In the establishment of this Technical Standard Order, consideration has been given to existing Government and industry standards for fire detectors for the purpose of adopting the performance requirements of one of the recognized aeronautical standards as the minimum safety requirements for fire detectors which are intended for use in civil aircraft. The specification of the Society of Automotive Engineers for fire detectors contains such requirements.

DIRECTIVE

Provision. Pursuant to §§ 04a.062, 04a.07, 04a.500, 04b.05 and 04b.38251 of the Civil Air Regulations, which authorize the Administrator to approve aircraft equipment, the performance requirements for fire detectors as set forth in SAE Specification AS–401, Fire and Heat Detectors, dated December 1, 1947,[1] stated below, with the exceptions hereinafter noted, are hereby established as minimum safety requirements for fire detectors which are intended for use in civil aircraft:

FIRE AND HEAT DETECTORS

1. *Purpose.* To specify minimum requirements for fire and heat detection instruments for use in aircraft, the operation of which may subject the instrument to environmental conditions specified in section 3.4.

2. *Scope.* This specification covers the following basic types of instruments, or combinations thereof, intended for use in protecting aircraft power plant installations, auxiliary power plants, combustion heaters and other installation where fuel, oil or similar fires may occur.

Type I. Rate of temperature rise.
Type II. Flame.
Type III. Fixed temperature.

3. *General requirements.*

3.1. *Materials and workmanship.*

3.1.1. *Materials.* Materials shall be of a quality which experience and/or tests have demonstrated to be suitable and dependable for use in aircraft instruments.

3.1.2. *Workmanship.* Workmanship shall be consistent with high-grade aircraft instrument manufacturing practice.

3.2. *Radio interference.* The instrument shall not be the source of objectionable interference, under operating conditions at any frequencies used on aircraft, either by radiation of feed-back, in radio sets installed in the same aircraft as the instrument.

3.3. *Identification.* The following information shall be legibly and permanently marked on the instrument or attached thereto:

(a) Name of instrument.
(b) SAE Spec. AS–401.
(c) Rating (electrical, vacuum, etc.).
(d) Alarm temperature (sensing element, where applicable).
(e) Manufacturer's part number.
(f) Manufacturer's serial number or date of manufacture.
(g) Manufacturer's name and/or trademark.

3.4. *Environmental conditions.* The following conditions have been established as design criteria only. Tests shall be conducted as specified in sections 5, 6, and 7.

3.4.1. *Temperature.* When mounted in accordance with the manufacturer's recommendations, the unit shall function over the range of ambient temperatures shown in column A below and shall not be adversely affected by exposure to the temperatures shown in column B below:

Instrument location	A	B
Power plant compartments	−20° to 100° C.	−65° to 120° C.
Other areas	−20° to 70° C.	−65° to 70° C.

3.4.2. *Humidity.* The instrument shall function and not be adversely affected by exposure to a relative humidity of up to and including 95% at a temperature of approximately 32° C.

3.4.3. *Altitude.* The instrument shall function and shall not be adversely affected when subjected to a pressure and temperature range equivalent to −1,000 feet to +40,000 feet standard altitude.

3.4.4. *Vibration.* When mounted in accordance with the instrument manufacturer's instructions, the units shall function and shall not be adversely affected when subjected to the following vibrations at a frequency of 500 to 3,000 cycles per minute. When specified by the purchaser for use in rotary wing aircraft, the frequency range shall be 150 to 3,000 cycles per minute.

Type of instrument mounting	Amplitude	Acceleration
Structurally mounted instruments	*Inch* 0.030	3.8*g*
Engine compartment mounted instruments	.20	25*g*

It is understood that the instrument shall withstand vibration at higher frequencies, but the acceleration values need not exceed those shown above.

4. *Detail requirements.*

4.1. *Indicating method.* The instrument shall be capable of actuating both visual and aural alarm indicators.

4.2. *Reliability.* False signals in the instrument shall not result from variations in voltage between 0 and 125% of the rated flight altitude, dust and accelerations encountered in flight or landing.

4.3. *Integrity test provisions.* The instrument shall permit testing of the continuity of the associated electrical circuit in flight.

4.4. *Calibration adjustment.* All calibration adjustments in the instrument shall be provided with tamper-proof seals.

5. *Test conditions:*

5.1. *Atmospheric conditions.* Unless otherwise specified, all tests required by this specification shall be conducted at an atmospheric pressure of approximately 29.92 inches of

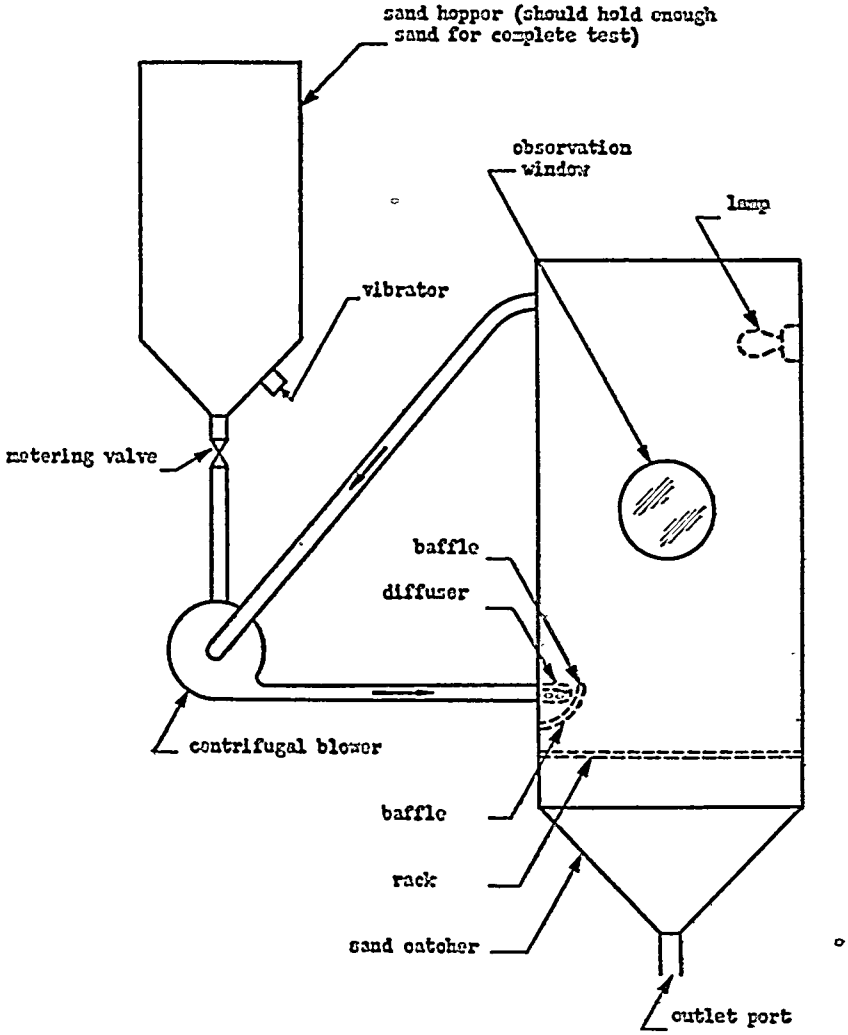

FIGURE 1.—Schematic Sand Test Arrangement (Reference Sec. 7.9).

[1] Copies may be obtained from the Society of Automotive Engineers, 29 West Thirty-ninth Street, New York, N. Y.

mercury and at an ambient temperature of approximately 22° C. When tests are conducted with the atmospheric pressure or the temperature substantially different from these values, allowance shall be made for the variations from the specified conditions.

5.2. *Vibration (to minimize friction).* Unless otherwise specified, all tests for performance may be made with the instrument subjected to a vibration of 0.002 to 0.005 inches amplitude at a frequency of 1,500 to 2,000 cycles per minute. The term amplitude as used herein indicates the total displacement from positive maximum to negative maximum.

5.3. *Vibration stand.* A vibration stand shall be used which will vibrate at any desired frequency between 500 and 3,000 cycles per minute and shall subject the instrument to vibration such that a point on the instrument will describe, in a plane inclined 45 degrees to the horizontal plane, a circle, the diameter of which is equal to the amplitude specified herein.

5.4. *Test position.* Unless otherwise specified, the instrument shall be mounted and tested in its normal operation position.

5.5. *Power conditions.* Unless otherwise specified, all tests shall be conducted at the power rating recommended by the manufacturer and the instrument shall be in an operating condition.

5.6. *Flame temperature measurement and flame size.* All flame temperatures shall be measured by using an 18 gauge wire thermocouple and the two strands of wire shall be twisted together for a distance of ½ inch from the thermocouple bead. The thermocouple bead shall be at the center of the flame and the two wires leading to the bead shall be parallel and extend radially into the flame. The nature and size of the flame and the method of test shall be specified in Figure 2.

5.7. *Test sample.* Unless otherwise specified, when qualification tests are being conducted on continuous type detectors, at least eight inches of the continuous detecting element shall be subjected to the test conditions as well as at least two typical insulators, supports, or connectors of each basic type used.

6. *Individual performance tests.* All instruments or components of such shall be subjected to whatever tests the manufacturer deems necessary to demonstrate specific compliance with this specification.

6.1. *Response time.* The sensing element shall be tested as specified in section 7.1, or in some equivalent manner which will adequately check the sensitivity and calibration.

6.2. *Dielectric.* The instrumen shall be subjected to whichever one of the following dielectric tests is most applicable:

6.2.1. Ungrounded instruments, or grounded instruments prior to connection of internal ground wire, shall be tested by either the method of section 6.2.1.1 or 6.2.1.2.

6.2.1.1. *Insulation resistance.* The insulation resistance measured at 500 volts d-c between all electrical circuits connected together and the metallic case shall not be less than 20 megohms.

6.2.1.2. *Dielectric strength.* The insulation shall withstand without evidence of damage the application of a sinusoidal voltage at a commercial frequency between all electrical circuits connected together and the metallic case, for a period of 5 seconds. The R. M. S. value of the sinusoidal voltage applied shall be either five (5) times the maximum instrument operating voltage, or 500 volts, whichever is the greater.

6.2.2. Instruments operated with a permanent internal ground connection shall be tested as follows:

The insulation shall withstand without evidence of damage the application of a sinusoidal voltage at a commercial frequency between each electric circuit and the metallic case, for a period of 5 seconds. The R. M. S. value of the sinusoidal voltage applied shall be 1.25 times the maximum circuit operating voltage obtainable between two test points.

7. *Qualification tests.* As many instruments as appear necessary to demonstrate that all instruments will comply with the requirements of this section shall be subjected to the following tests where applicable. The tests on each instrument shall be conducted consecutively and after the tests have been initiated, no further adjustments of the instrument shall be permitted. There shall be no false alarms signalled during any of the tests. A response time test per section 7.1 shall be conducted after each qualification test, except sections 7.1.1, 7.2, 7.3, 7.3.1, 7.3.2, 7.3.3 and 7.14. However, except in the case of the response time test following the qualification test of section 7.14, the instrument subjected to the response time test need not be the same instrument or instrument's being subjected to the entire series of qualification tests.

7.1. *Response time.* The sensing element shall be tested in an 815° C. maximum temperature flame as specified in Figure 2. The ambient temperature from which the test is started shall be normal room temperature. However, a higher starting ambient temperature may be used if the sensing element is specified for use only in locations where the ambient temperature will not, under any normal continuous operating conditions, fall below this value. For types of detectors and detector systems whose sensitivity is affected by the number of sensing elements, by the length of the sensing element exposed to flame (for continuous types), or by other factors which may be varied from one system design to another, all response time tests shall be conducted with the least sensitive system configuration to be used. The time of response shall not exceed 5 seconds when the instrument is tested in accordance with this section.

7.1.1. *Repeat response time.* The sensing element(s) of the fire detector system shall be subjected to an 815° C. flame for a period of one minute. It shall then be removed from the flame. Within 5 seconds after the alarm has cleared the sensing element shall again be subjected to the flame. An alarm shall be signalled in five seconds. The units subjected to this test need not be subjected to any other tests.

7.2. *Fixed temperature operation.* (For Type III instruments only.) The detecting element shall be placed in a suitable heating chamber and the temperature shall be raised at the rate of not less than 7° C. per minute, to not less than 80% of the rated temperature setting. The temperature shall be maintained at this value for not less than

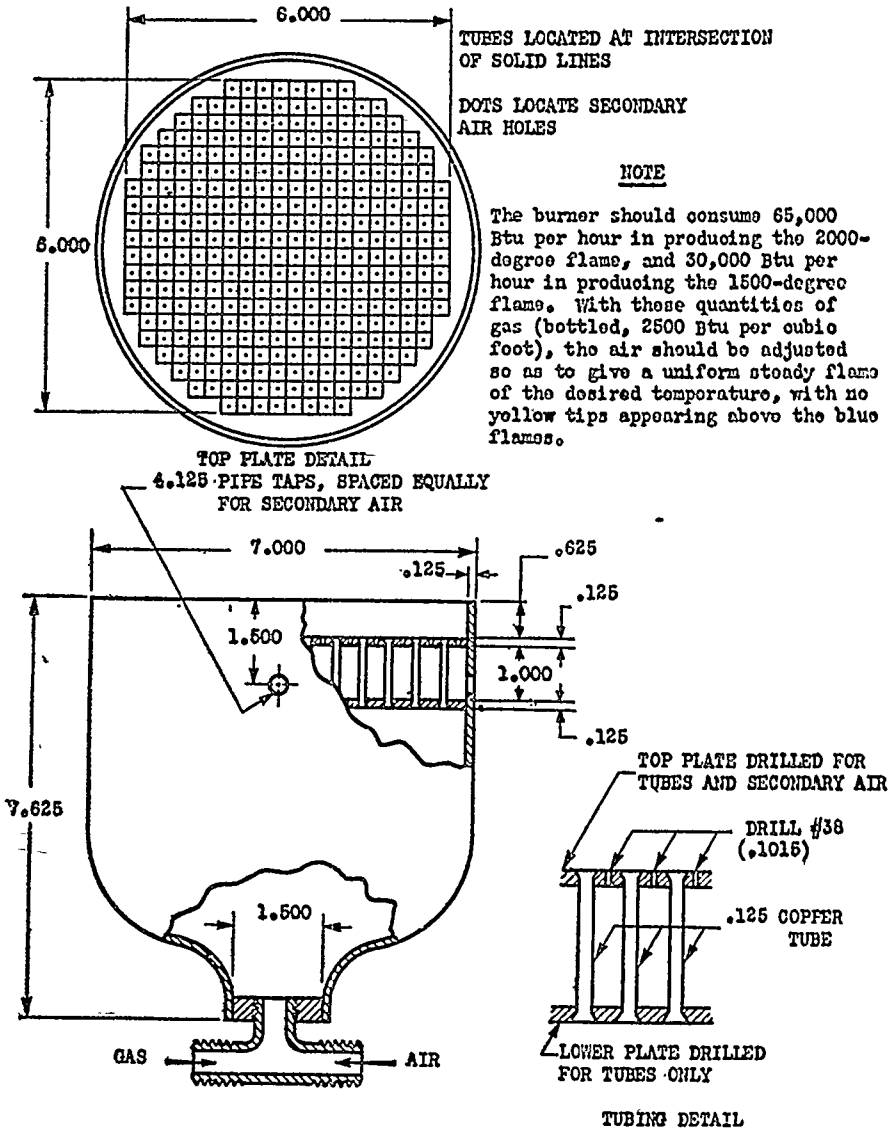

FIGURE 2.—Flame Test Burner (Reference Secs. 5.6, 7.1 and 7.14).

one hour. The temperature shall then be raised, at a rate of not more than 7° C. per minute, to 10% above the rated temperature setting. An alarm shall be signalled within a tolerance of 10% of the rated temperature setting. The temperature shall then be lowered, at a rate of not more than 7° C. per minute. The alarm indication shall cease before the temperature falls below 90% of the rated setting.

7.3. *False alarm due to rate of temperature rise.* No alarm shall be signalled during these tests except in the case of Type III instruments which may signal an alarm when the temperature reaches a value not less than 90% of the rated setting. For types of detectors and detector systems whose sensitivity is affected by the number of sensing elements, the length of the sensing element exposed to the test temperature (for continuous types), or by other factors which may be varied from one system design to another, the tests of 7.3.1 and 7.3.2 shall be conducted with the most sensitive system configuration to be used.

7.3.1. *False alarm due to local temperature rise.* The sensing element shall be subjected to various combinations of rates of temperature rise and durations of these rates of rise. Except as indicated in section 7.3, no alarm shall be signalled when the element is exposed to any combination of the rates of rise and durations within the shaded area in Figure 3 (a). This test shall be conducted in a manner simulating conditions due to local overheating.

7.3.2. *False alarm due to general temperature rise.* The test of 7.3.1 shall be repeated except that Figure 3 (b) shall be employed and the test shall be conducted in a manner simulating conditions existing due to a general temperature rise throughout an engine compartment where the sensing element(s) may be located.

7.3.3. *False clearing of alarm due to partial extinguishing of fire.* The system configuration specified in 7.3 shall be subjected to an 815° C. flame for 30 seconds. The flame shall then be removed from all except the portion of the system as specified in 7.1. The alarm shall not clear. After an additional 30 seconds the flame shall be removed entirely and the alarm shall then clear. The units subjected to this test need not be subjected to any other test.

7.4. *Vibration.* The instrument shall be mounted on a vibration stand, in its own shock mounted base, if provided with one, in its normal operating plane. The instrument shall be subjected to vibration with an amplitude between 0.003 and 0.005 inch at frequencies for 500 to 3,000 cycles per minute, in order to determine whether the natural frequency of the instrument occurs in this frequency range.

7.5. *Vibration endurance.* With the instrument mounted on a vibration stand, per section 7.4, it shall be vibrated continuously at a total amplitude as specified in section 3.4.4 for a period of 24 hours at the natural frequency, if applicable, as determined in section 7.4, or if not applicable, at a frequency of 2,000 cycles per minute. No damage shall be evident after this test. In the case of this test, the response time test of 7.1.1 shall be conducted while the instrument is being vibrated. However, the sensing and indicating elements need not be vibrated simultaneously unless it is apparent that simultaneous vibration will be critical.

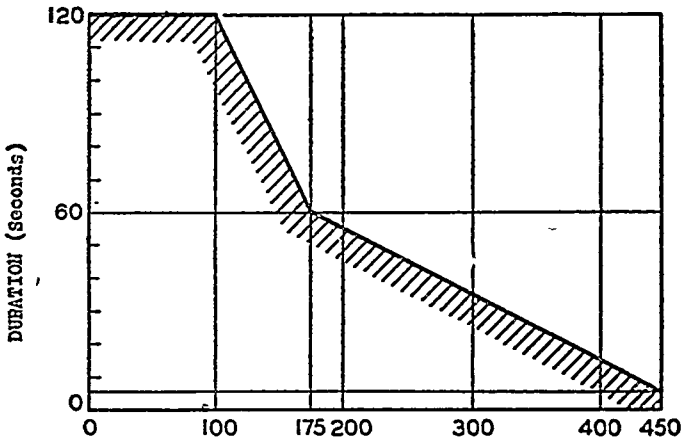

FIGURE 3 (a)

Local temperature rise condition
(Ref. Section 7.3.1)

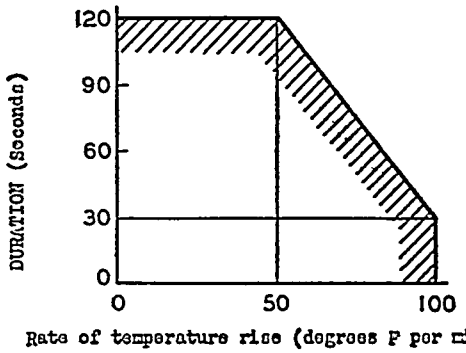

FIGURE 3 (b).—General Temperature Rise Condition (Reference Sec. 7.3.2).

7.6. *Water spray.* All parts of the instrument which may be installed in exposed portions of the airplane shall be subjected to the following tests:

7.6.1. *Simulated rain.* The components being tested shall be subjected to a spray of water, to simulate rain, for a period of three hours. The detector shall not be dried prior to testing per section 7.1.

7.6.2. *Salt spray.* The components being tested shall be subjected to spray with a 20% sodium chloride solution for a period of fifteen minutes. The components shall then be dried in air at room temperature before they are tested per section 7.1. The components shall not be cleaned before the test of section 7.1 is conducted.

7.7. *Corrosion.* All parts of the instrument which may be installed in exposed portions of the airplane shall be subjected to a finely atomized spray of 20% sodium chloride solution for 200 hours. At the end of this period the parts shall be allowed to dry and may then be cleaned prior to conducting the test per section 7.1.

7.8. *Fuel and oil immersion.* All parts of the instrument which may be located in engine compartments, or other locations where they may be contaminated by fuel or oil, shall be subjected to the following tests:

7.8.1. *Fuel immersion.* The components being tested shall be thoroughly immersed in normally leaded 100 octane fuel at approximately room temperature and then allowed to drain for one minute before being tested per section 7.1. No cleaning other than the drainage specified above shall be accomplished prior to conducting subsequent tests.

7.8.2. *Oil immersion.* The same test shall be conducted with used SAE #60 oil.

7.9. *Sand.* All parts of the instrument which may be installed in exposed portions of the airplane (such as in nacelles, wheel wells, etc.) shall be subjected to a sand or dust laden air stream, flowing at a constant rate of 2½ pounds per hour, for four hours. The stream shall be formed of sand or dust that has been sifted through a 150 mesh screen and shall pass over all parts of the units under test. The test chamber shall be equivalent to that shown in Figure 1.

7.10. *High temperature.* All components of the instrument which may be located in engine compartments shall be exposed to a temperature of 130° C. for 48 hours prior to being tested per section 7.1 except a 130° C. All other components shall be subjected to a similar test at 70° C.

7.11. *Low temperature.* The instrument shall be exposed to a temperature of −65° C. for a period of 24 hours, after which it shall be raised to a temperature of −55° C. for a period of six hours prior to being tested per section 6.1 except at −55° C. However, compliance with section 7.1 shall be considered to have been accomplished in this case if the time of response does not exceed 10 seconds.

7.12. *Altitude effects.*

7.12.1. *High altitude and rate of climb.* The instrument shall be subjected to a pressure that is varied from normal atmospheric pressure to an altitude pressure equivalent to 40,000 feet at a rate of not less than 3,000 feet per minute. The instrument shall be maintained at the altitude pressure equivalent to 40,000 feet for a period of 48 hours. The instrument shall then be returned to sea level conditions and then tested per section 7.1. Sealed units shall not leak as a result of exposure to this pressure. Where applicable, this shall be demonstrated by immersion in water after the test.

7.12.2. *Low altitude.* The instrument shall be subjected to the same test as outlined in section 7.12.1, except that the rate of pressure variation need not be as specified therein and the pressure shall be maintained at an altitude pressure equivalent to −1,000 feet.

7.12.3. *Pressurization test.* All components of the instrument which may be located in

pressurized area shall be subjected to an external pressure of 8 p. s. i. for a period of fifteen minutes. The response time test of 7.1.1 shall be conducted while the components involved are under the 8 p. s. i. pressure.

7.13. *Voltage variation.* The instrument shall be operated with the voltage varying from 110% to 75% of the rated. The instrument shall then be tested per section 6.1 under these conditions. Compliance with the provisions of section 4.2 shall also be demonstrated.

7.14. *Flame.* The detecting element of the instrument shall be subjected to a completely enveloping flame at a temperature of 1,100° C. minimum for two periods of one minute each. The flame shall be as specified in Figure 2. The instrument shall be cooled to approximately room temperature or to the ambient temperature permitted in section 7.2 after each exposure to flame. The instrument shall then be exposed to the same flame a third time. An alarm shall be signalled in not more than five seconds after each exposure to flame. During cooling of the instrument after the first two exposures to flame the alarm shall clear in not more than 45 seconds after the flame has been removed in the first two cases. Artificial means of cooling the instrument shall not be used until after the alarm has cleared. A manual resetting device may be used to clear the alarm provided it is demonstrated that the resetting device will clear the alarm only if the flame has been removed; i. e., if flame is still present and the manual resetting device is operated, the instrument must continue to indicate the presence of a fire. The instrument need not clear the alarm and need not be capable of further operation after the third exposure to flame. During this test the sensing element shall be subjected to vibration as specified in section 7.5.

Exceptions. Item (b) of section 3.3, "Identification," need not be complied with for conformance with the terms of this order.

Application. Fire detectors complying with the specifications appearing in this Technical Standard Order are hereby approved for all aircraft for protection of aircraft power plant installations, combustion heaters, or other installations where fuel, oil or similar fires may occur. Fire detectors already approved by the Administrator may continue to be installed in aircraft:

(1) For which an application for original type certificate is made prior to the effective date of this order,

(2) The prototype of which is flown within one year after the effective date of this order, and

(3) The prototype of which is not flown within one year after the effective date of this order if due to causes beyond the applicant's control provided application for a type certificate is made prior to the effective date of this order.

If a major change is made in the installation within nine months after the effective date of this order involving a change in type or model of fire detector, previously approved types of fire detectors may be installed. However, in any such change made after the nine month period, new types of fire detectors installed in aircraft shall meet the specifications contained herein.

SPECIFIC INSTRUCTIONS

Marking. In addition to the identification information required in the referenced specification (see "Exceptions" above), each fire detector shall be permanently marked with the Technical Standard Order designation, CAA-TSO-C11, to identify the fire detector as meeting the requirements of this Order in accordance with the manufacturers' statement of conformance outlined below. This identification will be accepted by the Civil Aeronautics Administration as evidence that the established minimum safety requirements for fire detectors have been met.

Data requirements. Ten copies of the following technical information shall be submitted by the manufacturer of the fire detector with his statement of conformance to the Civil Aeronautics Administration, Aircraft Service, Attn: A-298, Washington 25, D. C. These data shall consist of all information such as descriptive data, drawings, diagrams, etc., which are necessary to define the limitations of use for which the fire detectors are satisfactory, and which are essential to outline the conditions for their proper installation and operation. They shall include at least the following, wherever applicable, in addition to other limitations which may apply:

(1) Maximum allowable normal ambient temperature at the point of detector location.

(2) Maximum allowable rate of temperature rise at point of detector location as a result of normal operation.

(3) Electrical circuit arrangement.

(4) Operating voltage.

(5) Mounting or support method.

(6) Maximum or minimum number of units or detector length which can be used in one circuit or one fire zone without adversely affecting sensitivity or causing false indications due to temperature variations associated with normal operation.

Effective date. After August 1, 1948, specifications contained in this Technical Standard Order will constitute the basis for Civil Aeronautics Administration approval of fire detectors for use in certificated aircraft.

Deviations. Requests for deviation from, or waiver of, the requirements of this order, which affect the basic airworthiness of the component, should be submitted for approval by the Director, Aircraft Service, Office of Aviation Safety, Civil Aeronautics Administration. These requests should be addressed to the nearest Regional Office of the Civil Aeronautics Administration, Attn: Superintendent, Aircraft Branch.

Conformance. The manufacturer shall furnish to the CAA (address as noted under "Data Requirements" above), a written statement of conformance signed by a responsible official of his company, setting forth that the fire detector to be produced by him meets the minimum safety requirements established in this order. Immediately thereafter distribution of the fire detector conforming with the terms of this order may be started and continued.

The prescribed identification on the fire detector does not relieve the aircraft manufacturer or owner of responsibility for the proper application of the fire detector in his aircraft, nor waive any of the requirements concerning type certification of the aircraft in accordance with existing Civil Air Regulations.

If complaints of nonconformance with the requirements of this order are brought to the attention of the Civil Aeronautics Administration, and investigation indicates that such complaints are justified, the Administrator will take appropriate action to restrict the use of the product involved.

Copies of this Technical Standard Order and other Technical Standard Orders may be obtained from the Civil Aeronautics Administration, Aviation Information Staff, Washington 25, D. C.

(Secs. 205 (a), 601, 603, 52 Stat. 984, 1007, 1009, 54 Stat. 1231, 1233–1235; 49 U. S. C. 425 (a) 551, 553)

[SEAL] D. W RENTZEL,
Administrator of Civil Aeronautics.

[F. R. Doc. 48-6001; Filed, July 9, 1948; 9:00 a. m.]

[Supplement 1 [1]]

PART 04b—AIRPLANE AIRWORTHINESS; TRANSPORT CATEGORIES

Section 04b.05 provides that materials, parts, processes, and appliances shall be approved upon a basis and in a manner found necessary by the Administrator to implement the pertinent provisions of the Civil Air Regulations; that the Administrator may adopt and publish such specifications as he finds necessary to administer this regulation, and shall incorporate therein such portions of the aviation industry, Federal, and military specifications respecting such materials, parts, processes, and appliances as he finds appropriate; and that any material, part, process, or appliance, shall be deemed to have met the requirements for approval when it meets the pertinent specifications adopted by the Administrator, and the manufacturer so certifies in a manner prescribed by the Administrator.

Acting pursuant to the foregoing authority, the following specifications are hereby adopted. They are made effective on the dates indicated, in order to promote safety of the flying public. Compliance with the notice, procedures, and effective date provisions of section 4 of the Administrative Procedure Act (60 Stat. 237, 238; 5 U. S. C. 1001, 1003) would be impracticable, unnecessary, and contrary to the public interest, and therefore is not required.

§ 04b.05 *Approval of materials, parts, processes, and appliances.* * * *

(CAA Specifications)

Specifications by the Administrator of Civil Aeronautics applicable to § 04b.05 appear under § 04a.07, *supra.*

(Secs. 205 (a), 601, 603, 52 Stat. 984, 1007, 1009; 54 Stat. 1231, 1233–1235; 49 U. S. C. 425 (a) 551, 553)

D. W RENTZEL,
Administrator of Civil Aeronautics.

[F. R. Doc. 48-6002; Filed, July 9, 1948; 9:00 a. m.]

[Supplement 1]

PART 06—ROTORCRAFT AIRWORTHINESS

Section 06.05 provides that materials, parts, processes, and appliances shall be approved upon a basis and in a manner found necessary by the Administrator to implement the pertinent provisions of the Civil Air Regulations; that the Administrator may adopt and publish such specifications as he finds necessary to administer this regulation, and shall incorporate therein such portions of the aviation industry, Federal, and military specifications respecting such materials, parts, processes, and appliances as he finds appropriate; and that any material, part, process, or appliance shall be deemed to have met the requirements for approval when it meets the pertinent

[1] Supplement 1, effective November 15, 1947, published in 12 F. R. 7624, is hereby revoked. It is superseded by Supplement 1 published herewith. (In Supp. 1, appearing at 12 F. R. 7624, references to Part 701 appear under §§ 04b.300, 04b.38251.)

specifications adopted by the Administrator, and the manufacturer so certifies in a manner prescribed by the Administrator.

Acting pursuant to the foregoing authority, the following specifications are hereby adopted. They are made effective on the dates indicated, in order to promote safety of the flying public. Compliance with the notice, procedures, and effective date provisions of section 4 of the Administrative Procedure Act (60 Stat. 237, 238; 5 U. S. C. 1001, 1003) would be impracticable, unnecessary, and contrary to the public interest, and therefore is not required.

§ 06.05 *Approval of materials, parts, processes, and appliances.* * * *

(CAA Specifications)

Specifications by the Administrator of Civil Aeronautics applicable to § 06.05 appear under § 04a.07, *supra*.

(Secs. 205 (a) 601, 603, 52 Stat. 984, 1007, 1009; 54 Stat. 1231, 1233–1235; 49 U. S. C. 425 (a) 551, 553)

D. W. RENTZEL,
Administrator of Civil Aeronautics.

[F. R. Doc. 48-6003; Filed, July 9, 1948; 9:00 a. m.]

Chapter II—Civil Aeronautics Administration

PART 701—SMOKE DETECTORS

REVOCATION OF PART

Part 701, published in 12 F. R. 7624–7626, is hereby revoked. It is superseded by the Standards published herewith in Chapter I under Part 04a, § 04a.07, *supra*.

(Secs. 205 (a) 601, 603, 52 Stat. 984, 1007, 1009; 54 Stat. 1231, 1233–1235; 49 U. S. C. 425 (a) 551)

D. W RENTZEL,
Administrator of Civil Aeronautics.

[F. R. Doc. 48-6004; Filed, July 9, 1948; 9:01 a. m.]

TITLE 15—COMMERCE

Chapter III—Bureau of Foreign and Domestic Commerce, Department of Commerce

[Materials Control Reg. 1-A]

PART 329—DELEGATIONS OF AUTHORITY FOR THE OFFICE OF DOMESTIC COMMERCE

DISTRIBUTION OF ANHYDROUS AMMONIA

§ 329.1a *Materials Control Regulation 1-A*—(a) *Explanation.* This section provides for the performance of the responsibility of the Department of Commerce under section 205 of Public Law 793, 80th Congress, approved June 28, 1948 (Foreign Aid Appropriation Act, 1949) That section charges the Department of Commerce with the responsibility of directing the distribution of certain quantities of anhydrous ammonia to be made available by the Department of the Army for the commercial production of nitrogenous fertilizer materials for domestic use.

(b) *Delegation.* The Director of the Office of Domestic Commerce is hereby authorized to perform the functions and to exercise the powers conferred upon the Department of Commerce by section 205 of Public Law 793, 80th Congress.

The authority hereby delegated to the Director may be exercised in such manner as he may prescribe, subject to the provisions of Public Law 793, and may be redelegated by him, subject to his discretion and control, to such officers of the Department of Commerce, whether or not within the Office of Domestic Commerce, as he may designate. (R. S. 161, Pub. Law 793, 80th Cong., 5 U. S. C. 22)

Issued this 2d day of July 1948.

[SEAL] CHARLES SAWYER,
Secretary of Commerce.

[F. R. Doc. 48-6144; Filed, July 9, 1948; 8:45 a. m.]

PART 330—GENERAL ORGANIZATION AND FUNCTIONS

Pending revision of Part 330 to describe the functions transferred to the Office of Domestic Commerce from the Office of Materials Distribution as of May 7, 1948, Part 370, General Organization and Functions of the Office of Materials Distribution (12 F. R. 6355) is transferred to Part 330 and §§ 370.1–370.4, inclusive, are redesignated §§ 330.1a, 330.2a, 330.3a, and 330.4a.

(R. S. 161, 5 U. S. C. 22)

Issued this 2d day of July, 1948.

[SEAL] H. B. McCOY,
Director,
Office of Domestic Commerce.

Approved:

CHARLES SAWYER,
Secretary of Commerce.

[F. R. Doc. 48-6145; Filed, July 9, 1948; 8:45 a. m.]

PART 370—GENERAL ORGANIZATION AND FUNCTIONS OF THE OFFICE OF MATERIALS DISTRIBUTION

CROSS REFERENCE: For the transfer of this part to Part 330 of this chapter, and for the redesignation of §§ 370.1 to 370.4, inclusive, as §§ 330.1a, 330.2a, 330.3a, and 330.4a, see Part 330 of this chapter, *supra*.

TITLE 19—CUSTOMS DUTIES

Chapter I—Bureau of Customs, Department of the Treasury

[T. D. 51961]

PART 10—ARTICLES CONDITIONALLY FREE, SUBJECT TO A REDUCED RATE, ETC.

LIMESTONE, CRUDE, CRUSHED, OR BROKEN; FERTILIZER

Public Law No. 750, 80th Congress, effective June 24, 1948, amended paragraph 1685, Tariff Act of 1930, to provide for the free entry of crude, crushed, or broken limestone when imported to be used in the manufacture of fertilizer. Accordingly, Part 10 of the Customs Regulations of 1943 (19 CFR, Cum. Supp., Part 10) is hereby amended by adding the following new subcaption and section:

LIMESTONE

§ 10.101 *Limestone to be used in the manufacture of fertilizer.* Pursuant to paragraph 1685, Tariff Act of 1930, as amended,[1] crude, crushed, or broken limestone when imported to be used in the manufacture of fertilizer, may be released without the deposit of duty in the same manner and subject to the same conditions as leather to be used in the manufacture of footwear (see § 10.84) except that the proof of use shall show that the limestone was used in the manufacture of fertilizer and the other documents required shall be modified accordingly. (Sec. 201, par. 1685, 46 Stat. 678, sec. 624, 46 Stat. 759, Pub. Law No. 750, 80th Cong., 19 U. S. C. 1201, 1624)

[SEAL] W. R. JOHNSON,
Acting Commissioner of Customs.

Approved: July 6, 1948.

A. L. M. WIGGINS,
Acting Secretary of the Treasury.

[F. R. Doc. 48-6155; Filed, July 9, 1948; 8:52 a. m.]

TITLE 26—INTERNAL REVENUE

Chapter I—Bureau of Internal Revenue, Department of the Treasury

Subchapter A—Income and Excess-Profits Taxes

[T. D. 5642]

PART 37—CARRY-OVERS OF RAILROADS

CARRY-OVERS OF NET OPERATING LOSSES AND UNUSED EXCESS PROFITS CREDITS IN THE CASE OF CERTAIN SUCCESSOR RAILROAD CORPORATIONS

On March 25, 1948, notice of proposed rule making, regarding the application of Public Law 189 (80th Cong.) 61 Stat. 324, approved July 15, 1947, relating to carry-overs of net operating losses and unused excess profits credits in the case of certain successor railroad corporations, was published in the FEDERAL REGISTER (13 F. R. 1581). After consideration of all such relevant matter as was presented by interested persons regarding the proposal, the following regulations are hereby adopted (26 CFR, Part 37) These regulations are necessary to prescribe rules for the application of Public Law 189 (80th Cong.) 61 Stat. 324.

Sec.
37.0 Scope of regulations.
37.1 Allowance of carry-overs to certain successor railroad corporations.
37.2 Limitation on effect of carry-overs.
37.3 Rule where two or more predecessors or two or more successors.

[1] "Guano; basic slag (ground or unground); manures; limestone, crude, crushed, or broken, when imported to be used in the manufacture of fertilizer; and (notwithstanding any other provision of this Act) those grades of substances used chiefly for fertilizers, or chiefly as an ingredient in the manufacture of fertilizers." (Tariff Act of 1930, par. 1635, as amended (free list); 19 U. S. C. 1201, par. 1635.)

Sec.
37.4 Extension of period of limitation on refunds and deficiencies.

AUTHORITY: §§ 37.0 to 37.4, inclusive, issued under 53 Stat. 467, Pub. Law 189, 80th Cong., 61 Stat. 224; 26 U. S. C. 3791.

§ 37.0 *Scope of regulations.* The regulations in this part pertain to the application of Public Law 189 (80th Congress) 61 Stat. 324, approved July 15, 1947, which law is referred to herein as the "act"

The regulations in this part apply for the purpose of certain determinations under the Internal Revenue Code (hereinafter referred to as the "Code") as affected by the act. The sections of the Code involved, and the application thereof generally, are not set forth in the regulations in this part; as to such sections and their general application, see Regulations 103 and 111 (Parts 19 and 29 of this chapter) relating to the income tax, Regulations 109 and 112 (Parts 30 and 35 of this chapter) relating to the excess profits tax, and Regulations 104 and 110 (Parts 23 and 33 of this chapter) relating to consolidated income and excess profits tax returns.

Inasmuch as these regulations constitute Part 37 of Title 26 of the Code of Federal Regulations, each section of these regulations begins with the number 37 and a decimal point.

[Public Law 189 (80th Congress), 61 Stat. 324, approved July 15, 1947]

AN ACT

To allow to a successor railroad corporation the benefits of certain carry-overs of a predecessor corporation for the purposes of certain provisions of the Internal Revenue Code

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That [Sec. 1.] (a) If a railroad corporation (as defined in section 77m of the National Bankruptcy Act, as amended) (hereinafter referred to as successor corporation) has acquired, prior to January 1, 1950, property from another such railroad corporation (hereinafter referred to as predecessor corporation) in a receivership proceeding, or in a proceeding under section 77 of the National Bankruptcy Act, as amended, and if the basis of the property so acquired is determined under section 113 (a) (20) of the Internal Revenue Code, then, for the purposes of the determination under the Internal Revenue Code of—

(1) The "net operating loss carry-over" from any taxable year beginning after December 31, 1938, under the law applicable to such taxable year, and

(2) The "excess profits credit carry-over" or the "unused excess profits credit carry-over" from any taxable year beginning after December 31, 1939, under the law applicable to such taxable year.

the net operating losses and the unused excess profits credits of such predecessor corporation for the taxable year in which the acquisition occurred and for the two preceding taxable years shall be carry-overs to such successor corporation in the manner and to the extent provided in regulations prescribed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, as necessary to apply such net operating losses and unused excess profits credits as carry-overs so far as possible as if the predecessor corporation had been made use of in such proceeding instead of the successor corporation.

(b) For the purposes of this section, the taxable year of the successor corporation in which the acquisition occurred shall be considered as a taxable year succeeding the taxable year of the predecessor corporation in which the acquisition occurred.

(c) For the purposes of this section, if the period, beginning on the first day of the taxable year of the predecessor corporation in which the acquisition occurred and ending on the last day of the taxable year of the successor corporation in which the acquisition occurred, is not more than twelve months, the number of taxable years to which such net operating loss or unused excess profits credit is a carry-over shall be three instead of two, and such regulations shall prescribe (as nearly as possible in the same manner as provided in section 122 (b) (2) and section 710 (c) (3) (B) of such code) the amount to be carried over to the last of such succeeding years.

§ 37.1 *Allowance of carry-overs to certain successor railroad corporations—* (a) *In general.* The act applies only to railroad corporations (as defined in section 77m of the National Bankruptcy Act, as amended) which acquired, prior to January 1, 1950, property of one or more other railroad corporations (as so defined) in a receivership proceeding or in a proceeding under section 77 of the National Bankruptcy Act, as amended, and where the basis of the property so acquired is determined under section 113 (a) (20) of the Code. A railroad corporation which has thus acquired property is hereinafter referred to as the "successor corporation" or the "successor" and the corporation from which the property was so acquired is referred to as the "predecessor corporation" or the "predecessor"

In the case of a successor corporation, the net operating losses and unused excess profits credits of the predecessor corporation are allowed, as provided under section 1 of the act and the regulations in this part, as carry-overs to the successor corporation for the purposes of the determination under the Code of the "net operating loss carry-over" from any taxable year beginning after December 31, 1938, and the "excess profits credit carry-over" and the "unused excess profits credit carry-over" from any taxable year beginning after December 31, 1939, in each case under the law applicable to such taxable year. Thus, the method of computation of the carry-overs as well as the years for which such carry-overs are available (except as provided in subsections (b) and (c) of section 1 of the act) and the computation of the net operating loss deduction and the unused excess profits credit adjustment (called the "excess profits credit carry-over" for taxable years beginning in 1940) are governed by the provisions of the applicable law under the Code.

In general, the carry-over to which the predecessor was entitled at the time of the acquisition will be available to the successor. Moreover, in general the successor corporation will not be allowed a carry-over for a taxable year, or a carry-over from a taxable year, which would not be allowed to the predecessor corporation under the Code if the predecessor corporation had been made use of under the receivership proceedings or the proceedings under section 77 of the Bankruptcy Act instead of the successor corporation. Thus, except as provided in subsections (b) and (c) of section 1 of the act, carry-overs will be allowed as provided under the Code only for the two immediately succeeding taxable years, and carry-overs will not be created from any year if the otherwise applicable provisions of the Code provide no carry-over from such year. For example, a net operating loss carry-over will not be allowed from a taxable year beginning prior to January 1, 1939, and will not be allowed from any subsequent year if a carry-over from such year would not be allowed under the Code to the reorganized railroad corporation if it had come out of the receivership or bankruptcy proceeding under the same charter instead of being reorganized under a new charter.

The provisions of subsection (a) of section 1 of the act to the effect that there shall be carried over to the successor corporation the net operating losses and unused excess profits credits of the predecessor corporation from the second taxable year preceding its taxable year in which acquisition occurred are applicable as to such second preceding year only if subsection (c) of section 1 of the act is applicable. See paragraph (c) of this section.

Section 1 of the act does not apply to any carry-back of a successor corporation or of a predecessor corporation. Thus, a net operating loss or unused excess profits credit of a successor corporation cannot be carried back for the use of a predecessor corporation. As to a limitation on the reduction of tax of the successor corporation for a taxable year for which it has a carry-back, where such carry-back is made available or increased in amount by reason of the use in a prior taxable year of a carry-over provided for by section 1 of the act, see section 2 of the act and § 37.2.

For application of section 1 of the act and of this section where there are two or more predecessor corporations or two or more successor corporations, see section 3 of the act and § 37.3.

(b) *Rules for determining manner and extent of allowance of carry-overs to successor corporation.* The net operating losses and unused excess profits credits of a predecessor corporation shall be carry-overs to its successor corporation in the manner and to the extent provided in the act and in the regulations in this part so far as possible as if the predecessor corporation had been made use of in the receivership or bankruptcy proceeding instead of the successor corporation.

In determining the taxable years for which there are such carry-overs, the taxable year of the successor in which the acquisition occurred is the first taxable year succeeding the taxable year of the predecessor in which the acquisition occurred and subsequent taxable years of the successor follow in order. Any such succeeding taxable year may also be an "intervening" taxable year for the purposes of the application of sections 122 and 710 (c) of the Code. As a general rule, therefore, a net operating loss or unused excess profits credit of the predecessor corporation:

(1) For the taxable year of the predecessor immediately preceding its taxable year in which the acquisition occurred, will be a carry-over for the taxable year of the predecessor in which the acquisition occurred and for the taxable year of the successor in which the acquisition occurred;

(2) For the taxable year of the predecessor in which the acquisition occurred, will be a carry-over for the taxable year of the successor in which the acquisition occurred and for the next immediately succeeding taxable year of the successor following such taxable year of the successor in which the acquisition occurred.

A variation from such general rule stated in the immediately preceding sentence may arise under the special rule of subsection (c) of section 1 of the act, under which there may be a carry-over for three taxable years. For application of this special rule, see paragraph (c) of this section.

Another variation to the above stated general rule may arise in cases in which the predecessor has continued after the acquisition with a taxable year or taxable years subsequent to the taxable year of the predecessor in which the acquisition occurred. In such cases, the carry-overs shall not be denied to the predecessor for such subsequent year or years if available to the predecessor under the otherwise applicable law. However, the amount of any net operating loss or unused excess profits credit of the predecessor available as a carry-over to the successor under section 1 of the act shall be reduced in order to prevent duplication of the use of a carry-over. Such reduction shall be the amount by which such carry-over would be reduced if such subsequent year or years of the predecessor were an intervening taxable year or intervening taxable years of the successor, succeeding the taxable year of the predecessor in which the acquisition occurred and preceding the taxable year of the successor in which the acquisition occurred. Notwithstanding this treatment, however, such subsequent year or years of the predecessor shall not be counted for the purpose of determining the number of years for which there may be such a carry-over to the successor. The method of computing a carry-over where there is more than one intervening taxable year is set forth in paragraph (c) of this section and this method shall be applicable for the purposes of this paragraph. The pro rata reduction of the adjusted excess profits net income for an intervening taxable year provided for in certain cases under paragraph (c) of this section where the intervening taxable year is a period of less than twelve months is applicable, however, only where such an intervening taxable year is a taxable year in which the acquisition occurred and is not applicable to subsequent taxable years of the precedessor which are considered intervening taxable years for the purposes of this paragraph.

There are no carry-overs to a successor corporation under this section from a predecessor corporation's taxable year beginning after the taxable year of the predecessor in which the acquisition occurred. Moreover, the net operating losses and unused excess profits credits of the predecessor shall not be carry-overs for any taxable year of the successor prior to the taxable year of the successor in which the acquisition occurred.

In applying section 1 of the act, the computation of the taxes of the successor corporation shall be made under the facts as they actually exist in the case of the successor corporation, except for the allowance of the carry-overs provided for by the act. The amounts to be included on account of such carry-overs in the net operating loss deduction and unused excess profits credit adjustment (called the "excess profits credit carry-over" for taxable years beginning in 1940) of the successor for its taxable year in which the acquisition occurred (except as provided above to prevent duplication and except as provided in paragraph (c) of this section) shall be the same amounts as would be included if such taxable year were the taxable year of the predecessor immediately succeeding the taxable year of the predecessor in which the acquisition occurred, except that the reduction of such carry-overs required under section 122 (c) in determining the net operating loss deduction shall be made upon the basis of the net income and normal tax net income (both computed as provided in section 122 (c)) of the successor corporation. If the taxable year of the successor immediately following its taxable year in which the acquisition occurred is the second succeeding taxable year for which there is a carry-over, the amounts to be included for such taxable year (except as provided above to prevent duplication and except as provided in paragraph (c) of this section) shall be the same amounts as if such year were the second succeeding taxable year of the predecessor to which there was such carry-over, except that the reduction under section 122 (c) and the reduction relating to intervening years provided for under sections 122 (b) (2) and 710 (c) (3) (B) (or section 710 (c) (2) for taxable years beginning in 1940) shall be made upon the basis of the items of the successor.

The operation of the above provisions of the regulations in this part may be illustrated by the following example:

Example. The A Railroad Corporation, which made its returns on the calendar year basis, for 1941 sustained a net operating loss of $100,000 and had an unused excess profits credit of $1,000,000. A did not have any carry-overs from any prior years. The B Railway Corporation was organized on July 1, 1941, and made its first return on the basis of the fiscal year ended June 30, 1942. It received permission to change its accounting period to a calendar year basis and made returns for the short taxable year, July 1, 1942–December 31, 1942, and for the calendar year 1943. On August 31, 1941, B acquired all the assets of A, the basis of which is determined under section 113 (a) (20) of the Code. A terminated its existence as of December 31, 1941. B did not have any net operating loss or any unused excess profits credit from its operations.

The net operating loss of A for 1941 is a net operating loss carry-over of B for its fiscal year ended June 30, 1942, and for its short taxable year ended December 31, 1942, but not thereafter. The net operating loss carry-over for B's fiscal year ended June 30, 1942, is $100,000; and the net operating loss deduction of B for such fiscal year is such carry-over reduced, however, by the amount, if any, by which B's net income for such fiscal year exceeds B's normal tax net income for such fiscal year, both being computed as provided under the applicable provisions of section 122 (c) of the Code. The net operating loss carry-over for the short taxable year ended December 31, 1942, is the excess of $100,000, if any, over the net income of B for its fiscal year ended June 30, 1942, computed as provided in section 122 (b) (2) of the Code under the applicable law; and the net operating loss deduction of B for such short taxable year is such excess, reduced, however, by the amount, if any, by which B's net income for such short year exceeds B's normal tax net income for such short year, both being computed as provided under the applicable provisions of section 122 (c) (and section 47 (c), relating to income placed on an annual basis).

The unused excess profits credit of A for 1941 is an unused excess profits credit carry-over of B for its fiscal year ended June 30, 1942, and for its short taxable year ended December 31, 1942, but not thereafter. The unused excess profits credit carry-over for B's fiscal year ended June 30, 1942, is $1,000,000 and the unused excess profits credit adjustment for such fiscal year is such carry-over. The unused excess profits credit carry-over for the short taxable year ended December 31, 1942, is the excess, if any, of $1,000,000 over the adjusted excess profits net income of B for its fiscal year ended June 30, 1942 (computed as provided in section 710 (c) (3) (B) of the Code under the applicable law), and the unused excess profits credit adjustment of B for such short taxable year is such excess.

(c) *Special rule where taxable years of predecessor and successor in which acquisition occurred begin and end in same period of not more than twelve months.* Under subsection (c) of section 1 of the act it is possible to have a carry-over for three taxable years. The provisions of subsection (c) of section 1 apply only where the period beginning on the first day of the taxable year of the predecessor corporation in which the acquisition occurred and ending on the last day of the taxable year of the successor corporation in which the acquisition occurred is not more than twelve months. In such a case, where a net operating loss or an unused excess profits credit of the predecessor arose in:

(1) The predecessor's taxable year in which the acquisition occurred, there may be a carry-over for the successor's taxable year in which the acquisition occurred and for its next two taxable years;

(2) The predecessor's first taxable year preceding its taxable year in which the acquisition occurred, there may be a carry-over for the successor's taxable year in which the acquisition occurred and for its next taxable year;

(3) The predecessor's second taxable year preceding its taxable year in which the acquisition occurred, there may be a carry-over for the successor's taxable year in which the acquisition occurred.

The rule of subsection (c) of section 1 is directed to situations in which, in effect, the period in which fall the taxable years (of predecessor and of successor) in which the acquisition occurred would have been but one taxable year of the predecessor if the railroad had been reorganized under the old charter. Fre-

quently one or both of such taxable years in which the acquisition occurred are periods of less than twelve months, but such periods nevertheless are counted as taxable years for the purpose of determining the number of years for which carry-overs are permitted.

In any case in which there is a carry-over to a third succeeding taxable year under subsection (c) of section 1 of the act, it is necessary to treat each of the first and second taxable years succeeding the taxable year in which the net operating loss or unused excess profits credit arose as intervening taxable years for purposes of section 122 (b) (2) and section 710 (c) (3) (B) In applying these sections of the Code, the carry-over for the third succeeding taxable year shall be the excess, if any of the carry-over for the second succeeding taxable year over, in the case of a net operating loss carry-over, the net income for the second succeeding taxable year (computed as provided in section 122 (b) (2)) or, in the case of an unused excess profits credit carry-over, the adjusted excess profits net income for the second succeeding taxable year (computed as provided in section 710 (c) (3) (B))

The application of subsection (c) of section 1 may be illustrated by the following example:

Example: The M Railroad Corporation is the predecessor corporation and the N Railway Corporation is the successor corporation, both within the meaning of the act, with N having acquired the property of M on May 31, 1941. Both M and N make their returns on the calendar year basis. N was organized on April 1, 1941, and made its first return for the short taxable year, April 1, 1941–December 31, 1941. M was dissolved on August 31, 1941, and made its last return for the short taxable year ending on that date.

For 1940 M sustained a net operating loss in the amount of $150,000, and for its short taxable year ended August 31, 1941, it had net income, computed as provided in section 122 (b) (2), of $50,000. For N's short taxable year ended December 31, 1941, it had $70,000 of net income (and no adjustments under section 122 (d) (1), (2), (4) and (6) are applicable. There are no carry-backs.

Under the above facts, there is a carry-over of $150,000 for the taxable year of M ended August 31, 1941. There is a carry-over to N for its first taxable year (ended December 31, 1941) of $100,000 (that is, the excess of $150,000 over $50,000). There is a carry-over to N for its taxable year ended December 31, 1942, of $30,000 (that is, the excess of $100,000 over $70,000).

In the application of subsection (c) of section 1, additional steps are necessary in some cases in computing the unused excess profits credit carry-over for the taxable year of the successor in which the acquisition occurred and for succeeding taxable years of the successor. In a case where the taxable year in which the acquisition occurred (of the predecessor or successor) is a period of less than twelve months, then under section 711 (a) (3) of the Code the excess profits net income for such short taxable year is required to be computed upon the basis of a period of twelve months, and accordingly the adjusted excess profits net income is on an annual basis. In such a case under subsection (c) of section 1 of the act, the adjusted excess profits net income for such a short taxable year (of the predecessor or successor, or such short taxable years of both, as the case may be, taken separately) when computed for the purposes of section 710 (c) (3) (B) (for an intervening taxable year) shall be reduced to an amount which is the same proportion thereof as the excess profits net income for the short taxable year is of the excess profits net income for such short taxable year computed on an annual basis.

The application of the above rule in cases under subsection (c) of section 1 involving unused excess profits credit carry-overs is illustrated by the following example:

Example: The X Railroad Corporation and Y Railroad Corporation make their returns on the calendar year basis. For 1943, X had an unused excess profits credit (after being reduced by reason of its use as a carry-back as provided in section 710 (c) (3) (B) of the Code) of $60,000 available as a carry-over. Y was organized and commenced business on July 2, 1944. The property of X (the predecessor) was acquired by Y (the successor) on August 31, 1944. X was dissolved on August 31, 1944.

For its taxable year ending August 31, 1944, X had an excess profits credit of $336,000 and an excess profits net income of $244,000 before being placed on an annual basis. For its short taxable year ending December 31, 1944, Y had an excess profits credit of $224,000 and an excess profits net income of $122,000 before being placed on an annual basis. Y had no carry-backs for any year.

X will pay no excess profits tax for its taxable year ending August 31, 1944, as shown by the following computation:

Excess profits net income placed on an annual basis under section 711 (a) (3) (A)		$366,000
Specific exemption	$10,000	
Excess profits credit	336,000	
Unused excess profits credit adjustment	60,000	406,000
Adjusted excess profits net income		0

The unused excess profits credit adjustment of Y will be the amounts of the carry-overs computed below:

For the Short Taxable Year Ending December 31, 1944

(1) Unused excess profits credit of X	$60,000
(2) Adjusted excess profits net income of X for its taxable year ending August 31, 1944, computed for the purposes of section 710 (c) (3) (B) ($366,000 less $336,000)	30,000
(3) Amount in (2) placed on basis of X's short taxable year ended August 31, 1944 (244/366ths of $30,000)	20,000
(4) Unused excess profits credit carry-over for short taxable year of Y ending December 31, 1944 (excess of amount in (1) over amount in (3))	40,000

For the Taxable Year Ending December 31, 1945

(i) Unused excess profits carry-over for second intervening year (item (4) in computation for year ended December 31, 1944)	$40,000
(ii) Excess profits net income of Y for its taxable year ended December 31, 1944, placed on an annual basis as provided in section 711 (a) (3) (A) of the Code	244,000
(iii) Adjusted excess profits net income of Y for its taxable year ended December 31, 1944, computed for the purposes of section 710 (a) (3) (B) ($244,000 less $224,000)	20,000
(iv) Amount in (iii) placed on basis of Y's short taxable year ended December 31, 1944 (183/366ths of $20,000)	$10,000
(v) Unused excess profits credit carry-over for the taxable year of Y ended December 31, 1945:	
Unused excess profits credit carry-over for second intervening taxable year (item (i)) $40,000	
Less:	
Adjusted excess profits net income for second intervening taxable year (item (iv)) 10,000	
	30,000

[Public Law 189 (80th Congress), 61 Stat. 324, approved July 15, 1947]

SEC. 2. (a) In the case of any taxable year of the successor corporation, if:

(1) The aggregate for such taxable year of the taxes of the successor corporation imposed by chapter 1 and subchapter E of chapter 2 of the Internal Revenue Code, computed without regard to this act,

is less than the amount of:

(2) The aggregate of such taxes (determined under regulations prescribed by the Commissioner with the approval of the Secretary) that would have been imposed on the predecessor corporation for such taxable year if the predecessor corporation had been made use of in such proceeding instead of the successor corporation,

then the taxes of the successor corporation for such taxable year shall be the taxes computed without regard to this act.

(b) In the case of any taxable year to which subsection (a) of this section is not applicable, if:

(1) The aggregate for such taxable year of the taxes of the successor corporation imposed by chapter 1 and subchapter E of chapter 2 of the Internal Revenue Code, computed without regard to this section,

is less than the amount of:

(2) The aggregate of such taxes (determined under regulations prescribed by the Commissioner with the approval of the Secretary) that would have been imposed on the predecessor corporation for such taxable year if the predecessor corporation had been made use of in such proceeding instead of the successor corporation,

then the taxes of the successor corporation for such taxable year shall be the taxes so determined under regulations as the taxes that would have been imposed on the predecessor corporation for such taxable year.

(c) This section shall be applicable to those taxable years of the successor corporation to which there is a carry-over of a net operating loss or unused excess profits credit under section 1, and to any later taxable year for which a net operating loss deduction or unused excess profits credit adjustment results or is increased by reason of the use in another year of a carry-over permitted under section 1.

§ 37.2 *Limitation on effect of carry-overs.* Section 2 of the act limits the effect of the carry-overs otherwise permitted under section 1 of the act, both for any taxable year of the successor corporation for which there is a carry-over permitted by section 1 of the act and for certain later taxable years described below.

Subsection (a) of section 2 provides for a comparison of the aggregate of the income and excess profits taxes of the successor corporation for any taxable year, determined without regard to any carry-overs permitted by this act, with the aggregate of the income and excess

profits taxes that would have been imposed on the predecessor corporation for such taxable year if the predecessor corporation had been made use of in the proceeding instead of the successor corporation. If for any taxable year the successor's aggregate so determined without regard to the carry-overs permitted by the act is less than the aggregate of the predecessor for such year, then any carry-over permitted by the act shall be disregarded in computing the successor's taxes for such taxable year.

Subsection (b) of section 2 provides that if the successor's aggregate as determined in the preceding paragraph, though not less than the aggregate of the predecessor, would be reduced to a lesser amount than the predecessor's aggregate by an application of section 1 of the act (which permits a carry-over) then the successor's taxes for that year shall be the taxes that would have been imposed on the predecessor corporation, that is, the same amounts as the taxes that make up the predecessor's aggregate.

Subsection (c) of section 2 provides that subsections (a) and (b) described above, shall apply to those taxable years of the successor corporation for which there is a carry-over under section 1, and to any later taxable year for which a net operating loss deduction or unused excess profits credit adjustment results or is increased by reason of the use in another year of such a carry-over. Thus, for example, if a net operating loss carry-over from the predecessor corporation to the successor corporation, which is on the calendar year basis, is permitted under section 1 for 1941, section 2 of the act applies to 1941. If there is an unused excess profits credit carry-over for 1942 from 1941, which is increased by the net operating loss carry-over from the predecessor for 1941, then section 2 applies to 1942. If there is an unused excess profits credit for 1944 which is a carry-back for 1942 and 1943, and if the amount of the carry-back for 1943 (the portion of the carry-back which is not applied against adjusted excess profits net income for 1942) is increased by reason of the unused excess profits credit carry-over for 1942 which in turn was increased by the net operating loss carry-over from the predecessor corporation to the successor corporation for 1941, then section 2 also applies to 1943.

Section 2 of the act is operative only to limit the net tax reduction that would otherwise result from an application of the provisions of section 1 of the act. Any carry-overs permitted by section 1 are considered as having been used for the year to which section 2 applies to the extent that they would have been used had section 2 not been applicable.

The comparisons required to be made under this section shall first be made for the taxable year of the successor in which the acquisition occurred. The taxes that would have been imposed on the predecessor corporation had it been made use of in the proceeding instead of the successor corporation shall be determined by adjusting the items which enter into the computation of the successor corporation's taxes to accord with the amounts such items would have been for such taxable year if the charter of the predecessor corporation had been used. The comparisons shall be made on the basis of the taxable year of the successor in which the acquisition occurred. Such adjustment shall be made in the items which enter into the computation of the successor's taxes as are necessary to give effect for the period of its taxable year on and after the date of the acquisition to such computations as would be proper for the predecessor for such period if the predecessor had not transferred the property and had continued under its old charter for such period. Similar adjustments shall be made for all taxable years of the successor subsequent to the acquisition, following in order, for which comparisons are required to be made under this section, regardless of the accounting periods of the predecessor or whether the predecessor continues in existence.

The adjustments in the items of the successor referred to immediately above and in this paragraph are to be made for the purposes of determining the taxes that would have been imposed on the predecessor corporation and are not actual adjustments to be made for all purposes in determining the taxes of the successor. If the successor corporation uses a different method of computing depreciation from the predecessor corporation or if the successor corporation uses a depreciation method of accounting and the predecessor used the retirement method, adjustments shall be made to the extent which would be required if the successor corporation had first been bound by the predecessor corporation's method and had then changed its method to that of the successor, with the adjustments required for such change, after obtaining the permission of the Commissioner. If the same depreciation method is used by the predecessor and the successor, then the depreciation shall be computed in the same manner as the successor would have been required to compute it if it were the predecessor operating under the predecessor's charter, that is, by using the same reserves and the same percentages as would have been proper in such case. Similarly, the excess profits credit of the successor shall be adjusted to reflect the excess profits credit which it would have if its capital structure were obtained by using the predecessor's charter and making the necessary changes in the capital structure of the predecessor. Furthermore, adjustments shall also be made by including or excluding such additional items as would be included or excluded if the charter of the predecessor were used. Thus, if the predecessor were incorporated in State A, and the successor in State B, and if the State taxes imposed on the successor are greater than the taxes which would be imposed if it were incorporated in State A, then the deduction for State taxes shall be the amount which would be imposed if the corporation were incorporated in State A.

Section 2 may be illustrated by the following examples in which it is assumed that the corporations made their returns on the calendar year basis:

Example (1). As of the beginning of January 1, 1942, the successor corporation acquired all the properties of the predecessor corporation, the predecessor corporation being dissolved immediately thereafter. The successor corporation was a new corporation, having no capital, no income, and no deductions prior to this acquisition. For 1942, under section 1 of the act, the successor is allowed a net operating loss carry-over and an unused excess profits credit carry-over from its predecessor. There are no other carry-overs or carry-backs. The taxes of the successor for 1942 computed without regard to the carry-overs provided by the act are as follows:

Excess profits tax	$1,800,000
Normal tax	1,920,000
Surtax	1,280,000
Aggregate of taxes	5,000,000

Assume for the purpose of this example that, if the predecessor corporation had been used in place of the successor in the proceeding, its deductions and its excess profits credit would be less than that of the successor. The taxes that would have been imposed upon the predecessor for 1942, computed with its carry-overs, had it been used in place of the successor are as follows:

Excess profits tax	$2,250,000
Normal tax	1,920,000
Surtax	1,280,000
Aggregate of taxes	5,450,000

Since the aggregate of the taxes imposed on the successor without regard to the act ($5,000,000) is less than the aggregate that would have been imposed on the predecessor if it had been used in place of the successor ($5,450,000), the successor is not entitled to any carry-over under the act in computing its taxes for the taxable year 1942.

Example (2). In this example, involving the same corporations for the same taxable year, as in example (1), there is no net operating loss carry-over from the predecessor corporation but there is an unused excess profits credit carry-over, and the excess profits credit of the predecessor if it had been used in place of the successor is more than such credit in example (1). The taxes that would have been imposed on the predecessor for 1942 are as follows:

Excess profits tax	$900,000
Normal tax	2,160,000
Surtax	1,440,000
Aggregate of taxes	4,500,000

Section 2 (a) of the act, illustrated in example (1), does not apply since the aggregate of the taxes imposed on the successor without regard to the act ($5,000,000) is not less than the aggregate that would have been imposed on the predecessor had it been used in place of the successor in the proceeding ($4,500,000). However, the taxes of the successor computed with the carry-overs for 1942 provided by section 1 of the act are as follows:

Excess profits tax	
Normal tax	$2,400,000
Surtax	1,600,000
Aggregate of taxes	4,000,000

The aggregate of the taxes of the successor computed with the carry-overs provided by section 1 of the act ($4,000,000) is less than the aggregate of the taxes that would have been imposed on the predecessor if it had been used in the proceeding in place of the successor ($4,500,000). Subsection (b) of section 2 provides that in such a case, where subsection (a) of section 2 does not apply, the taxes of the successor corporation shall be the taxes that would have been imposed on the predecessor corporation if it had been so used in place of the successor. Accord-

ingly, the taxes of the successor corporation for the taxable year 1942 are as follows:

Excess profits tax	$900,000
Normal tax	2,160,000
Surtax	1,440,000

If in this example the aggregate of the taxes of the successor computed with the carry-overs provided by section 1 of the act had not been less than the aggregate of the taxes that would have been imposed on the predecessor if it had been used in the proceeding in place of the successor, the taxes of the successor would be its taxes computed with the carry-overs provided by section 1.

Example (3). In this example the taxes are computed for 1943, and the facts as to 1942 are the same as in example (2). There is no unused excess profits credit carry-over for 1943 as computed under section 710 (c) (3). Although section 2 (b) operated to limit the tax reduction for 1942 which would have resulted from the full use of the carry-over for 1942, the extent to which the carry-over is considered used is computed under section 710 (c) (3) without regard to that limitation. The successor corporation had an unused excess profits credit for 1944 which is a carry-back for 1942 and 1943. Since the amount of the carry-back for 1943 depends on the extent to which the carry-back was used for 1942, and since such use depends on the effect of the carry-over for 1942 permitted under section 1 of the act, subsection (c) of section 2 requires that section 2 be applied as a limitation on the tax for 1943. Accordingly, the tax of the successor corporation for 1943 must be computed first without regard to the carry-over under section 1 for 1942. The taxes of the successor so computed for 1943 are as follows:

Excess profits tax	$450,000
Normal tax	2,280,000
Surtax	1,520,000
Aggregate of taxes	4,250,000

The taxes of the predecessor corporation for 1943 must be computed also with the carry-back which would be applicable in the case of the predecessor corporation (if it had been used in the proceeding in place of the successor corporation) taking into account the use of the carry-back for 1942 as affected by the carry-over for 1942. The taxes of the predecessor corporation for 1943 as so computed are:

Excess profits tax	$1,350,000
Normal tax	2,040,000
Surtax	1,360,000
Aggregate of taxes	4,750,000

Since the aggregate of the taxes of the successor for 1943 computed without regard to the carry-overs provided by the act ($4,250,000) is less than the aggregate of the taxes which would be imposed on the predecessor if it had been used in place of the successor ($4,750,000), section 2 (a) provides that the taxes of the successor are to be computed without regard to the carry-over permitted under the act. Accordingly, such taxes will be the amounts shown above as the taxes of the successor computed without regard to the carry-overs permitted by the act.

[Public Law 189 (80th Congress), 61 Stat. 324, approved July 15, 1947]

SEC. 3. Where there are two or more predecessor corporations or two or more successor corporations, the provisions of sections 1 and 2 of this act shall be applied only to such extent and subject to such conditions, limitations, and exceptions as the Commissioner, with the approval of the Secretary, may by regulations prescribe.

§ 37.3 *Rule where two or more predecessors or two or more successors*—(a) *Allowance of carry-overs*—(1) *Two or more predecessor corporations.* If the successor corporation has acquired the properties of two or more other railroad corporations so that each of the latter are predecessor corporations within the meaning of the act, then section 1 of the act and § 37.1 shall be applied to the carry-over from any such predecessor corporation. If there are carry-overs from more than one predecessor corporation, then the following rules shall apply:

(i) There shall be determined under § 37.1 for each predecessor corporation both (*a*) those taxable years of the successor to which such carry-over or carry-overs are permitted, and (*b*) the amount of the carry-over or carry-overs from such predecessor for the taxable year of the successor in which the acquisition occurred.

(ii) If for any taxable year in which an acquisition occurred amounts are allowed as net operating loss carry-overs or unused excess profits credit carry-overs from two or more predecessor corporations, such amounts in each case shall be aggregated and treated as one net operating loss carry-over or unused excess profits credit carry-over, as the case may be, for such taxable year and for each succeeding taxable year for which the carry-overs making up the aggregate are permitted, reduction being made for such succeeding year for the use of the carry-over in the intervening year or years. If for any succeeding taxable year one or more but not all of such carry-overs are permitted, then the amount of the carry-over permitted (or aggregate of the carry-overs, if more than one) shall be computed by taking into account in determining the net income, or adjusted excess profits net income, as the case may be, for any intervening taxable year the carry-overs permitted for such intervening taxable year which are not permitted for the succeeding taxable year.

An example of the operation of the above rules is given in the following case:

Example: The X Corporation which makes its returns on the calendar year basis, was organized on January 1, 1944. X acquired on April 1, 1944, the properties of the A Corporation and of the B Corporation, and on June 30, 1945, the properties of the C Corporation so as to be the successor of A, B, and C within the meaning of the act.

The A Corporation, which made its returns on the calendar year basis, had a net operating loss for 1942, which, after reduction by its use as a carry-back (section 122 (b) (2)), was $100,000. A had net income for 1943 of $30,000 and for 1944 of $50,000, both computed without regard to such net operating loss. A was dissolved as of December 31, 1944.

The B Corporation, which made its returns on the calendar year basis, had a net operating loss for 1944 which, after reduction by its use as a carry-back (section 122 (b) (2)), was $30,000. B was dissolved as of December 31, 1944.

The C Corporation, which made its returns on the basis of a fiscal year ending June 30, had a net operating loss for its fiscal year ending June 30, 1945, which, after reduction by its use as a carry-back (section 122 (b) (2)), was $90,000. C was dissolved as of June 30, 1945.

The net income of X without regard to any net operating loss deduction is $25,000 for 1944 and $80,000 for 1945. X has no carry-backs.

The adjustments provided for under section 122 (d) (1), (2), (4), and (6) are not applicable in the case of the net income of X, A, B, and C.

Under § 37.1, the net operating loss of A is a carry-over to X for 1944, the year of acquisition.

The amount of such carry-over is $20,000 computed as follows:

Net operating loss for 1942	$100,000
Net income of A for 1943 (computed as provided in section 122 (b) (2) for an intervening year)	80,000
Net operating loss carry-over for 1944 (second succeeding taxable year)	70,000
Net income for 1944 (computed under section 122 (b) (2); see § 37.1 (c))	50,000
Net operating loss carry-over to X for 1944 (see § 37.1)	20,000

Under § 37.1 the net operating loss of B is a carry-over to X for 1944, the year of acquisition, and for 1945 and 1946, the next two succeeding taxable years. The amount of such carry-over to X for 1944 is $30,000, the net operating loss of B for 1944. Under § 37.1, the net operating loss of C for 1945 is a carry-over to X for 1945, the year of acquisition, and for 1946, the next succeeding taxable year. The net operating loss carry-over from C to X for 1945 is $90,000.

The net operating loss carry-over (from A and B) for X's taxable year 1944 is $50,000, computed as follows:

(a) Net operating loss carry-over from A's taxable year 1942	$20,000
(b) Net operating loss carry-over from B's taxable year 1944	30,000
(c) Aggregate of carry-overs for taxable year (items (a) and (b))	50,000

The net operating loss carry-over (from B and C) for X's taxable year 1945 is $115,000, computed as follows:

(1) Net operating loss carry-over from B for 1945:

Net operating loss carry-over from B for 1944, year of acquisition (item (b) above)	$30,000
Net income of X for intervening year 1944, computed without net operating loss deduction	25,000
Net operating loss deduction for intervening year 1944, taking into account carry-over from A permitted for 1944 but not for 1945	20,000
Net income for intervening year 1944 under section 122 (b) (2)	5,000
Carry-over from B for 1945	25,000
(2) Net operating loss carry-over from C	90,000
(3) Aggregate of carry-overs for the taxable year (items (1) and (2))	115,000

The net operating loss carry-over (from B and C) for X's taxable year 1946 is $35,000, computed as follows:

Aggregate of net operating loss carry-overs from B and C for 1945	$115,000
Net income for 1945, computed as an intervening year	80,000
Net operating loss carry-over for 1946	35,000

(2) *Two or more successor corporations.* If property of a railroad corporation has been acquired by two or more

other railroad corporations so that each of the latter are successor corporations within the meaning of the act, then section 1 of the act and § 37.1 shall be applied to the carry-overs from the predecessor corporation. The net operating losses and unused excess profits credits of such predecessor shall be allowed as carry-overs to each of the successor corporations as provided in § 37.1, but only to the extent that such net operating losses and unused excess profits credits are attributable to the property of the predecessor so acquired by such successor. As a general rule, the net operating losses and unused excess profits credits of the predecessor shall be attributed to the property of the predecessor acquired by a successor in the ratio which the adjusted basis for determining loss of such property bears to the adjusted basis for determining loss of all the property of the predecessor, each determined as of the close of the taxable year for which there was such net operating loss or unused excess profits credit, or as of the date of acquisition if the loss or the unused credit arose in the year of acquisition. If, however, the successor establishes to the satisfaction of the Commissioner (and submits, unless waived by the Commissioner, appropriate consents by the other successors) an amount which, in the opinion of the Commissioner, both more clearly reflects the portion of the net operating loss or unused excess profits credit of the predecessor attributable to the property so acquired and does not duplicate the use of such loss or credit by another successor or the predecessor, such an amount may be used by the successor in the computation of the carry-over.

(b) *Limitations on effect of carry-overs.* The limitations under section 2 of the act on the tax effect of carry-overs are applicable to the extent provided in this paragraph in cases where there are two or more predecessors or two or more successors. For this purpose, the rules of § 37.2 shall be applicable, except as herein provided.

If a comparison in taxes for a taxable year prescribed under § 37.2 is to be made for a corporation which is the successor of two or more predecessors (see paragraph (a) (1) of this section) for the purposes of section 2 "the taxes that would have been imposed on the predecessor corporation for such taxable year if the predecessor corporation had been made use of in such proceeding instead of the successor corporation" shall be the aggregate of the totals of each tax of the predecessors for the taxable year for which the comparison is to be made, determined as to each such predecessor as provided in § 37.2. The successor must accordingly establish with respect to each such predecessor the taxes that would have been imposed on such predecessor for such taxable year as if the predecessor corporation had emerged from the bankruptcy or receivership proceeding with its old charter and continued its separate existence.

The following specific rules are also applicable:

(1) The elections, methods of accounting, etc., of the successor shall be considered as if made or used by each predecessor, subject to such conditions as would be imposed in the case of the predecessor;

(2) In the case of any acquisition of additional property and other transactions by the successor (after the acquisition of the predecessors' property) all such acquisitions and transactions shall be considered to have been made by the predecessors, with particular acquisitions and other transactions to be attributed to each predecessor on the basis of business reasons which might have motivated such predecessor so to act;

(3) The aggregate of the separate totals may be adjusted to reflect the effect of additional factors established by the taxpayer, such as decreased overhead, if any, resulting from the operation of the properties of the separate predecessors by one corporation.

If a comparison in aggregate taxes for a taxable year prescribed under § 37.2 is to be made for a corporation which is one of several successor corporations with respect to a predecessor (see paragraph (a) (2) of this section), then for the purposes of section 2 "the taxes that would have been imposed on the predecessor corporation for such taxable year if the predecessor corporation had been made use of in such proceeding instead of the successor corporation" shall be determined as provided in § 37.2 by adjusting the items which enter into the computation of the successor's taxes to accord with the amounts such items would have been if the charter of the predecessor had been used and such predecessor had only the property of the successor.

[Public Law 189 (80th Congress), 61 Stat. 324, approved July 15, 1947]

SEC. 4. If the allowance of a credit or refund of an overpayment of tax resulting from the application of this act is prevented, on the date of the enactment of this act or within one year from such date, by the operation of any law or rule of law other than this section and other than section 3761 of the Internal Revenue Code, such overpayment shall be refunded or credited in the manner provided in the Internal Revenue Code if claim therefor is filed within one year from the date of the enactment of this act. No interest shall be allowed or paid on any overpayment or deficiency resulting from the application of this act.

§ 37.4 *Extension of period of limitation on refunds and deficiencies.* Section 4 of the act extends, for not more than one year after July 15, 1947, the period of limitation as to all years affected by the act if the refund or credit of any overpayment to the extent resulting from the application of the act is prevented on July 15, 1947, or within one year from such date, except where refund or credit is prevented by section 3761 of the Internal Revenue Code, relating to compromises. In such cases where section 4 extends the period of limitation, such overpayment shall be refunded or credited if claim therefor is filed within one year from July 15, 1947. Such overpayment shall be credited or refunded in the manner provided in the Internal Revenue Code. However, no interest shall be allowed or paid on any overpayment or deficiency resulting from the application of the act. If an overpayment resulting from the application of the act (for example, in an amount of excess profits tax) gives rise to a deficiency in a related tax (for example, in an amount of income tax) which deficiency, however, would be barred by the statute of limitations, such deficiency may be assessed and collected as provided in section 3807 of the Internal Revenue Code.

Since this Treasury decision prescribes the regulations under Public Law 189 (80th Congress) 61 Stat. 324, which is applicable in computing tax for prior years as provided therein this Treasury decision shall be effective for the entire period covered by such law (as provided in the exception applicable under section 4 (c) of the Administrative Procedure Act).

[SEAL] GEO. J. SCHOENEMAN,
Commissioner of Internal Revenue.

Approved: July 6, 1948.

JOHN W. SNYDER,
Secretary of the Treasury.

[F. R. Doc. 48-6155; Filed, July 9, 1948; 8:50 a. m.]

TITLE 32—NATIONAL DEFENSE

Chapter I—Secretary of Defense

[Transfer Order 3, Amdt. 1]

ORDER AUTHORIZING TRANSFER OF FEMALE PERSONNEL BETWEEN DEPARTMENT OF ARMY AND DEPARTMENT OF AIR FORCE

Pursuant to the authority vested in me by the National Security Act of 1947 (Act of 26 July 1947; Public Law 253, 80th Congress) and in order to effect certain transfers authorized or directed therein, it is hereby ordered as follows:

1. So much of paragraph 1 of Transfer Order No. 3, National Military Establishment, October 31, 1947, reading "(excepting personnel of the Women's Army Corps)" is hereby deleted.

2. This order shall be effective as of 1400 on June 12, 1948.

JAMES FORRESTAL,
Secretary of Defense.

JUNE 30, 1948.

[F. R. Doc. 48-6143; Filed, July 9, 1948; 8:45 a. m.]

TITLE 36—PARKS AND FORESTS

Chapter II—Forest Service, Department of Agriculture

PART 201—NATIONAL FORESTS

TRANSFER OF LANDS FROM THE UMATILLA NATIONAL FOREST TO THE WHITMAN NATIONAL FOREST

CROSS REFERENCE: For order transferring lands from the Umatilla National Forest, Oregon, to the Whitman National Forest, thereby affecting the tabulation contained in § 201.1, see Public Land Order 493 in the Appendix to Chapter I of Title 43, *infra*.

TITLE 39—POSTAL SERVICE

Chapter I—Post Office Department

PART 19—TRANSPORTATION OF MAILS

COMPREHENSIVE PLAN OF POSTMASTER GENERAL FOR TRANSPORTATION OF UNITED STATES MAIL BY RAILWAY COMMON CARRIERS IN PASSENGER TRAIN SERVICE

Whereas the Postmaster General, on July 2, 1948, filed with the Interstate Commerce Commission his comprehensive plan for the transportation of United States mail by railway common carriers in passenger train service, and it being found that compliance with the notice, public rule making procedure, and effective date requirements of the Administrative Procedure Act (5 U. S. C. 1003) is impracticable and contrary to public interest.

Now, therefore, it is ordered, That Part 19 of Title 39, Code of Federal Regulations, as amended (CFR, 1947, Supp.) be further amended by adding the following new sections:

Sec.
19.25 Purpose.
19.26 Transportation of the mail.
19.27 Definition of service.
19.28 Side and transfer service.
19.29 Authorizations.
19.30 Computation of service.
19.31 Designations of cars for return.
19.32 Claims for return movement.

AUTHORITY: §§ 19.25 to 19.32, inclusive issued under authority of 39 Stat. 412, 419, 425–431; 39 U. S. C. 523–541, 542–568.

§ 19.25 *Purpose.* This plan is for the purpose of enabling the Interstate Commerce Commission to fix fair and reasonable rates for the transportation of mail in accordance with the service prescribed by the Postmaster General and the manner and conditions thereof as set forth in this plan (39 Stat. 430; 39 U. S. C. 546) and in the exercise of the various powers conferred on the Postmaster General in the Railway Mail Pay Act of 1916 (39 Stat. 412, 419, 425–431, 39 U. S. C. 523–541, 542–568) including the power

(a) To prescribe the service to be performed by railway common carriers in transporting mail, and the manner and conditions of said service (39 U. S. C. 541),

(b) To decide upon what trains the mails shall be conveyed, and the manner of their conveyance (39 U. S. C. 539)

(c) To increase, reduce, or discontinue service by railway common carriers as the needs of the Postal Service, as determined by him, may require (39 U. S. C. 564)

§ 19.26 *Transportation of the mail.* (a) All railway common carriers engaged in the transportation of United States mail shall transport such mail in the manner, under the conditions, and with the service prescribed by the Post Office Department, and otherwise in accordance with the provisions of the Railway Mail Pay Act of 1916.

(b) Any railway common carrier desiring to be relieved of the transportation of the mail may make application to the Post Office Department accordingly, and consideration will be given to the granting of its request in whole or in part as the needs of the Postal Service will permit.

(c) Mail shall be carried upon such trains as the Post Office Department shall designate from time to time in the interest of the Postal Service and, unless otherwise shown in authorizations for mail service, the character of trains carrying the mails shall be that of the passenger train. In the event mails are transported in freight trains, no more than the usual and just freight rates shall be paid in accordance with the classifications and tariffs approved by the Interstate Commerce Commission.

(d) The speed of trains upon which mail shall be transported shall be that indicated in such published schedules as are maintained by railway common carriers for their general transportation business.

(e) Each railway common carrier engaged in the transportation of mail is hereby required to furnish such cars and in such number as are necessary for the service authorized by the Post Office Department.

(f) The construction, size, style, length, character, and furnishings of all cars, or parts of cars, which are to carry the mail, shall conform to the plans and specifications heretofore or hereafter approved by the Post Office Department.

§ 19.27 *Definition of service.* The Post Office Department shall state mail routes and authorize mail service thereon.

(a) The service shall be of the following classes:

(1) *Full railway post office car service.* Service of this class shall be authorized in standard cars, 60 feet in length, inside measurement, constructed and fitted in accordance with the plans and specifications approved by the Post Office Department for the handling, distribution, storage, and delivery of mail by railway postal clerks. The requirements for service in such cars shall include the furnishing of all interior fittings, and the sanitation, cleaning, heating, lighting, ice, and drinking water, both in terminals and en route. When required, such cars shall be suitably placed and made available for advance distribution before train departure.

(2) *Railway post office apartment service.* Service of this class shall be authorized in standard apartments, 30 and 15 feet in length, inside measurement. The apartment shall be separated from the remainder of the car by a partition. The requirements for service are essentially the same as in full railway post office cars with respect to construction and furnishings, sanitation, cleaning, heating, lighting, ice, and drinking water.

(3) *Storage car service.* Service of this class shall be authorized in standard cars, 60 feet in length, inside measurement, of the type and construction acceptable to the Post Office Department. This service is the transportation and handling of made-up mails in bulk. The requirements for storage car service shall include all necessary sanitation, cleaning, ventilation, heating, and lighting. The handling of mail into and from such cars shall be performed by employees of the railroad companies under instructions of postal employees with respect to proper routing and separation of mails.

(4) *Storage space service.* Service of this class shall be authorized in units of 3 feet or multiples thereof up to and including 45 feet, both sides of the car, in baggage, combination, or other cars acceptable to the Post Office Department. This service shall include the transportation and handling of mails of the same type as those handled in storage cars, and the requirements as to facilities and handling shall be the same. Pending determination by the Interstate Commerce Commission of the fair and reasonable rates and compensation for additional storage space units of 33 to 45 feet, inclusive, in multiples of 3 feet, payment therefor shall be made by prorating the authorized unit over the rate applicable to a storage car of the standard length.

(5) *Closed-pouch service.* Service of this class shall be the transportation and handling of made-up mails in acceptable cars in trains upon which no railway post office car or railway post office apartment is authorized. Service shall be authorized in units of 3 feet or multiples thereof up to and including 15 feet. Service of this class is to be performed by employees of the railroad companies who shall handle such mails into and from the car and be responsible therefor, in addition to furnishing officials of the railway mail service with a record of the car space used for mails.

(b) The services which the railroads are to render in connection with mail transportation shall be as follows:

(1) Railroad companies are required to perform all necessary switching of cars; to load all mail into cars so as to obtain maximum utilization of the space authorized, including the proper separation, piling, and storing of such mail in all except railway post office cars; and to deliver all mails from their cars except those mails in the care and custody of railway postal clerks in cars in which such employees are on duty. Mails shall be separated and conveniently and suitably placed for delivery to Government employees and contractors.

(2) Railroad companies are required to transfer all mails between cars in the same train where such transfers are necessary and required by the Post Office Department.

(3) Railroad companies are required to take the mails from and deliver them to Government employees and contractors for transfer to post offices or railroad stations, and to transfer mails between trains operating into and out of the same or directly contiguous railroad stations.

(4) Railroad companies are required to furnish all necessary facilities for caring for and handling mails, including suitable and adequate space and rooms in their stations for storing and transfer of mails in transit. They shall also furnish suitable and adequate office space for railway post office transfer clerks when required by the Post Office Department.

(5) Railroad companies are required to transport without extra charge the persons in charge of the mails and the agents and officers of the Post Office De-

partment and Postal Service, under the conditions prescribed by law and regulations pursuant thereto.

(6) Railroad companies are required to construct, light, and maintain mail cranes and mail chutes for the exchange of mails at points or stations on the run where the train does not stop and exchange of mails is necessary.

§ 19.28 *Side and transfer service.* (a) Railway common carriers may be required to perform side and transfer service at any point by the Post Office Department. Side service consists of transporting mails between railroad stations and post offices or postal stations. Transfer service consists of transporting mails between railroad stations.

(b) Railroad companies are required to transport mails between railroad stations and terminal post offices, regardless of distance, unless other provision therefor is made by the Post Office Department. They are also required to transport mails between railroad stations and intermediate post offices or postal stations, and between railroad stations, where the distance does not exceed 80 rods from the nearest railroad station at which the railroad company has an agent or representative employed, unless other provision therefor is made by the Post Office Department.

Conditions of the Service

§ 19.29 *Authorizations*—(a) *General provisions.* Authorizations shall be made in accordance with the Railway Mail Pay Act of 1916 and the needs of the Postal Service as determined by the Postmaster General. They shall conform to postal needs in all respects, including the class of service, frequency of service, the amount of space required, and distance of haul, and shall vary in accordance with the postal needs which they reflect. Authorizations shall not be made in excess of the Department's anticipated needs as a means of securing the service needed; and to the extent that actual needs prove to be less than anticipated needs on which authorizations have been based, authorizations shall be reduced accordingly. The Post Office Department shall furnish railway common carriers of mail such information as it possesses to enable the carriers conveniently to discharge their obligation to be ready to serve the Department.

(b) *By class and frequency of service.* (1) All existing authorizations of railway post office cars and railway post office apartments shall remain in effect unless and until modified as herein provided.

(2) Full storage cars shall be authorized at the beginning of the calendar month in which such service is to be performed when it can be foretold with reasonable accuracy that more than 45 feet of mail will be available for transportation in such cars on each of the days covered by the authorization. Such authorizations shall be based upon the experience of comparable periods, taking into consideration seasonal fluctuations and such other factors as may be pertinent in determining the needs of the Postal Service.

(3) Storage space units of 3 to 45 feet shall be authorized at the beginning of the calendar month in which such service is to be performed when it can be foretold with reasonable accuracy that the unit authorized will be needed for mail on the days covered by such authorization. Such authorizations shall be based on the experience of comparable periods, taking into consideration seasonal fluctuations and such other factors as may be pertinent in determining the needs of the Postal Service.

(4) All 3-foot units of closed-pouch space shall be authorized at the beginning of the calendar month in which such service is to be performed. All closed-pouch units in excess of 3 feet shall be authorized at the beginning of the calendar month in which such service is to be performed when it can be foretold with reasonable accuracy that the unit authorized will be needed for mail on the days covered by such authorization. Such authorization shall be based on the experience of comparable periods, taking into consideration seasonal fluctuations and such other factors as may be pertinent in determining the needs of the Postal Service.

(5) Return movements of storage cars may be utilized for closed-pouch service. When closed-pouch service is needed in a train on a day or days of the week on which no storage car is authorized, a unit of closed-pouch space of appropriate size shall be authorized on such day or days.

(c) *By distance.* Authorizations for all service shall be limited to the distance for which service is needed for the actual transportation of the mail.

(d) *By equipment.* (1) Authorizations for railway post office cars shall be for cars of the standard length of 60 feet. Authorizations for railway post office apartments shall be for the standard lengths of 30 or 15 feet, as the needs of the Postal Service require. Authorizations for full storage cars shall be for cars of the standard length of 60 feet. If a railroad company is unable to furnish railway post office cars, railway post office apartments, or full storage cars of the standard lengths authorized, but furnishes cars or apartments of lesser lengths, which are accepted by the Department to be sufficient for the service, claim shall be allowed only for the actual space furnished and used, prorated over the rate applicable to the standard length authorized.

(2) The Department does not require and shall not authorize cars or apartments longer than the standard lengths specified herein and prescribed by law. As a convenience to the carriers, and to enable them to obtain revenue from the operation of space which might otherwise be unused, the Department will accept the excess space beyond the standard lengths authorized to the extent that it will be utilized, when it may do so without detriment to the Postal Service, provided the cost to the Department does not exceed the pro rata cost of such space in standard size cars and apartments. Cars in excess of 60 feet in which a full railway post office unit of 60 feet is partitioned from the remainder of the car may be accepted to fulfill an authorization for a standard railway post office car of 60 feet, and the excess space in the remainder of the car may be utilized under the conditions specified above.

(e) *Modification of authorizations.* (1) Authorizations for service shall be subject to modification at any time to provide for new and additional service and for reduction or discontinuance of service.

(2) Authorizations for storage cars, and for supplementary storage and closed-pouch space may be made at any time during the calendar month to cover the requirements of the Postal Service on any day for service beyond that authorized for such day at the beginning of the calendar month.

(f) *Cancellations.* Authorizations for a full storage car shall be cancelled upon reasonable notice to the railroad whenever there is insufficient mail on any day to warrant its operation. Such cancellations shall not preclude the authorization and use of any available space in the train, including space in the cancelled car, if operated, for the transportation of mail in a storage space unit.

§ 19.30 *Computation of service.* (a) Authorizations for service in full railway post office cars and railway post office apartments shall be stated in both directions, and the maximum space authorized in either direction of a round trip car run shall be regarded as the space to be computed in both directions unless otherwise mutually agreed upon.

(b) In computing the car miles of full storage cars, the maximum space authorized in either direction of a round-trip car run shall be regarded as the space to be computed in both directions, unless the car be used by the company in the return movement, or otherwise mutually agreed upon.

(c) The miles of service of a storage space or closed-pouch space unit shall be determined by the space authorized and furnished over the authorized distance in one direction. Insofar as consistent with the needs of the Postal Service, such units shall be authorized so as to use the existing consist of complementary trains.

§ 19.31 *Designation of cars for return.* (a) The Post Office Department shall control the return movement of all railway post office cars, railway post office apartments, and storage cars. When it can be foretold with reasonable accuracy that the return movement will be needed for the Postal Service, such return movement will be authorized at the time the initial movement is authorized. Except as hereinafter provided, the same car used in the outbound movement shall be used for the return movement. A return movement not previously authorized by the Post Office Department shall commence at such time not later than 48 hours after the arrival of the initial movement as the Post Office Department shall designate, unless a longer period is agreed on, and except as hereinafter provided. When the same car used in the initial or outbound movement is not available for prompt return, due to operating reasons or because of the fur-

ther movement of the car in mail service over another operating division or rail line, the Post Office Department will permit the return of another car of the same type and practically the same dimensions and weight capacity as the car used in the initial movement, provided the substitute car is needed by the Department and is made available for use not later than 48 hours after arrival of the initial movement.

(b) When it is impracticable to return the same car promptly because of its further use in mail service over another operating division or rail line, and substitution of a car is not made as provided above, the Department will accept the return of the same car, provided such return is made available to the Department within a reasonable time as determined by the scheduled time for arrival at outbound destination and return to the point where claim is made by the originating or intermediate line.

§ 19.32 *Claims for return movement.* (a) No claim shall be allowed for the return movement of railway post office cars, railway post office apartments, and full storage cars of lesser length than the standard, unless such cars are used in the return direction for the transportation of mail, in which case claim shall be allowed on the basis of the space furnished and used, prorated over the rates applicable to the cars and apartments of the standard length authorized.

(b) Claim for the return movement of railway post office cars, railway post office apartments, and full storage cars of greater length than the standard shall be allowed on the basis of the standard length authorized.

(c) When a full car has been authorized, and for operating reasons the railroad company is permitted to transport the mail intended for the full car in more than one car, claim for such transportation shall be allowed for the space authorized to the extent furnished. Claim shall be allowed only for the return movement of any such car used exclusively for mail in the initial movement.

This plan shall take effect on August 1, 1948, and shall remain in force until modified by the Postmaster General in accordance with the needs of the Postal Service as determined by him.

[SEAL] J. M. DONALDSON,
Postmaster General.

[F. R. Doc. 48-6212; Filed, July 9, 1948; 8:47 a. m.]

TITLE 43—PUBLIC LANDS: INTERIOR

Chapter I—Bureau of Land Management, Department of the Interior

Appendix—Public Land Orders

[Public Land Order 493]

OREGON

TRANSFER OF LANDS FROM THE UMATILLA NATIONAL FOREST TO THE WHITMAN NATIONAL FOREST

By virtue of the authority vested in the President by the act of June 4, 1897, 30 Stat. 11, 36 (16 U. S. C. 473) and pursuant to Executive Order No. 9337 of April 24, 1943, and upon the recommendation of the Assistant Secretary of Agriculture, it is ordered as follows:

The following described lands within the exterior boundaries of the Umatilla National Forest, Oregon, are hereby transferred to the Whitman National Forest, effective July 1, 1946:

WILLAMETTE MERIDIAN

T. 3 S., R. 33½ E.,
Secs. 10, 15, 22, 27, and 34.

It is not intended by this order to give a national-forest status to any publicly-owned lands which have not hitherto had such a status, or to change the status of any publicly-owned lands which have hitherto had national-forest status.

—OSCAR L. CHAPMAN,
Acting Secretary of the Interior.

JULY 6, 1948.

[F. R. Doc. 48-6183; Filed, July 9, 1948; 9:01 a. m.]

[Public Land Order 494]

COLORADO AND UTAH

WITHDRAWING PUBLIC LANDS AND RESERVED MINERALS IN PATENTED LANDS FOR USE OF UNITED STATES ATOMIC ENERGY COMMISSION

By virtue of the authority vested in the President and pursuant to Executive Order No. 9337 of April 24, 1943, it is ordered as follows:

The public lands and the minerals reserved to the United States in the patented lands in the following-described areas in Colorado and Utah are hereby withdrawn from all forms of appropriation under the public-land laws, including the mining laws but not the mineral-leasing laws, and reserved for the use of the United States Atomic Energy Commission:

COLORADO

NEW MEXICO PRINCIPAL MERIDIAN

T. 49 N., R. 17 W.,
Secs. 4, 5, and 6.
T. 50 N., R. 17 W.,
Secs. 7, 8, secs. 17 to 20 inclusive, and secs. 29 to 32 inclusive.
T. 43 N., R. 18 W. (unsurveyed),
Sec. 5;
Sec. 6, E½.
T. 44 N., R. 18 W.,
Sec. 19, SW¼,
Sec. 29, SW¼,
Sec. 30, NW¼ and SE¼,
Sec. 31, NE¼,
Sec. 32, NW¼.
T. 49 N., R. 18 W. (partly unsurveyed),
Secs. 1 to 4 inclusive.
T. 50 N., R. 18 W. (partly unsurveyed),
Secs. 2 to 6 inclusive;
Secs. 9 to 16 inclusive;
Secs. 21 to 28 inclusive;
Secs. 32 to 36 inclusive.
T. 51 N., R. 18 W. (partly unsurveyed),
Secs. 19, 20, and 21;
Secs. 28 to 32 inclusive;
Secs. 34 and 35.
T. 43 N., R. 19 W.,
Sec. 1, lots 1, 2, S½NE¼,
Sec. 19, lots 1, 2, 3, 4, E½W½.
T. 44 N., R. 19 W.,
Sec. 24, SE¼,
Sec. 25, NE¼,
Sec. 36, SE¼.
T. 50 N., R. 19 W. (partly unsurveyed),
Secs. 4 to 10 inclusive;
Secs. 16, 17, and 18.
T. 51 N., R. 19 W. (partly unsurveyed),
Secs. 7, 18, 19, 31, 32, and 34.
T. 43 N., R. 20 W.,
Sec. 23, SE¼,
Sec. 24;
Sec. 25, NW¼,
Sec. 26, NE¼.
T. 50 N., R. 20 W.,
Secs. 1, 2, secs. 11 to 14 inclusive.
T. 51 N., R. 20 W. (partly unsurveyed),
Secs. 11 to 14 inclusive;
Secs. 23 to 26 inclusive;
Secs. 35 and 36.

SIXTH PRINCIPAL MERIDIAN

T. 15 S., R. 104 W.,
Secs. 29 to 32 inclusive.

UTAH

SALT LAKE MERIDIAN

T. 24 S., R. 25 E.
Secs. 24 to 27 inclusive;
Secs. 34, 35, and 36.
T. 25 S., R. 25 E.,
Secs. 1, 2, 3, 10, 11, and 12 (unsurveyed).
T. 24 S., R. 26 E.,
Secs. 16, 21, 28, and 33.
T. 25 S., R. 26 E.,
Secs. 4, 5, 7, 8, and 9;
Secs. 16 to 21 inclusive;
Secs. 28, 29, and 30.

The areas described, including both public and non-public land, aggregate 73,997 acres.

Any tract or tracts of land within the above-described areas, to which valid claims have attached under the public-land laws prior to the date of this order, are excluded from the reservation hereby made, *Provided, however,* That upon the abandonment or extinguishment of such claims for any cause, the reservation shall immediately become effective as to such tract or tracts and the minerals therein.

The reservation made by this order shall be subject to existing withdrawals affecting any of the lands.

OSCAR L. CHAPMAN,
Under Secretary of the Interior

JULY 7, 1948.

[F. R. Doc. 48-6184; Filed, July 9, 1948; 9:01 a. m.]

Chapter II—Bureau of Reclamation, Department of the Interior

PART 402—ANNUAL WATER CHARGES

ARIZONA AND NEW MEXICO

CROSS REFERENCE: For additions to the tabulation found in § 402.2, see F. R. Docs. 48-6146 and 48-6147, Department of the Interior, Bureau of Reclamation, in Notices section, *infra.*

TITLE 50—WILDLIFE

Chapter I—Fish and Wildlife Service, Department of the Interior

Subchapter C—National Wildlife Refuges; Individual Regulations

PART 24—WEST CENTRAL REGION NATIONAL WILDLIFE REFUGES

FISHING IN SWAN LAKE NATIONAL WILDLIFE REFUGE, MISSOURI

Basis and purposes: On the basis of observations and reports of field repre-

sentatives of the Fish and Wildlife Service it has been determined that additional waters of the Refuge can be opened to sport fishing without interfering with the management of the area for wildlife.

Section 24.886 is revised to read as follows:

§ 24.886 *Swan Lake National Wildlife Refuge, Missouri; noncommercial fishing.* Noncommercial fishing is permitted in the waters of the Swan Lake National Wildlife Refuge, Missouri, specified herein during the daylight hours of the period May 30 to September 15, inclusive, of each year in accordance with the following provisions:

(a) *Waters open to fishing.* The following waters of the refuge shall be open to fishing: *Area 1.* the area south of levee No. 1 in sections 3, 4, and 9, T. 55 N., R. 20 W., *Area 2:* the waters adjacent to levee No. 3 in sections 6 and 7, T. 55 N., R. 20 W., and section 31, T. 56 N., R. 20 W., and *Area 3:* the waters of Swan Lake west of the east ⅛ line of section 2, T. 55 N., R. 21 W., and west of the east ⅛ line of sections 26 and 35, T. 56 N., R. 21 W.

(b) *State fishing laws.* Entry on and use of this refuge for any purpose is governed by the regulations of the Secretary dated December 19, 1940 (5 F. R. 5284, 50 CFR, Cum. Supp., Part 12), as amended, and strict compliance therewith is required. Each fisherman must comply with the applicable State fishing laws and regulations, and must have on his person and exhibit at the request of any authorized Federal or State officer whatever license is required by such laws and regulations, which license shall serve as a Federal permit for fishing in the waters of the refuge.

(c) *Use of boats.* The use of rowboats, canoes, and other similar floating devices is permitted only in fishing Area 3, and the use of such boats, canoes, or other devices in any other part of the refuge is prohibited except for official purposes. The use of motorboats, either inboard or outboard, is prohibited on all waters of the refuge except for official purposes.

(d) *Temporary restrictions.* During periods of waterfowl concentrations on the Refuge, fishing will not be permitted in such areas of the Refuge as, in the judgment of the officer in charge, should be closed to fishing in order to provide adequate protection for such waterfowl concentrations and are posted suitably by such officer.

(Sec. 10, 45 Stat. 1224; 16 U. S. C. 715i; Reorg. Plan No. II of 1939, 4 F. R. 2731; Regulations, Fish and Wildlife Service, Dec. 19, 1942, 5 F. R. 5284; 50 CFR, Cum. Supp., Part 12, as amended)

Dated: July 2, 1948.

CLARENCE COTTAM,
Acting Director.

[F. R. Doc. 48-6161; Filed, July 9, 1948; 8:52 a. m.]

PROPOSED RULE MAKING

DEPARTMENT OF AGRICULTURE

Production and Marketing Administration

[7 CFR, Part 947]

HANDLING OF MILK IN FALL RIVER, MASS., MILK MARKETING AREA

NOTICE OF RECOMMENDED DECISION AND OPPORTUNITY TO FILE WRITTEN EXCEPTIONS WITH RESPECT TO PROPOSED MARKETING AGREEMENT AND TO PROPOSED AMENDMENT TO ORDER, AS AMENDED

Pursuant to the rules of practice and procedure governing proceedings to formulate marketing agreements and marketing orders (7 CFR, Supps. 900.1 et seq., 11 F. R. 7737, 12 F. R. 1159, 4904) notice is hereby given of the filing with the Hearing Clerk of this recommended decision of the Assistant Administrator, Production and Marketing Administration, United States Department of Agriculture, with respect to a proposed marketing agreement and a proposed amendment to the order, as amended, regulating the handling of milk in the Fall River, Massachusetts, milk marketing area, to be made effective pursuant to the provisions of the Agricultural Marketing Agreement Act of 1937, as amended (7 U. S. C. 601, et seq.) hereinafter referred to as the "act."

Interested parties may file exceptions to this recommended decision with the Hearing Clerk, Room 1844, South Building, United States Department of Agriculture, Washington 25, D. C., not later than the close of business on the 3d day after the publication of this recommended decision in the FEDERAL REGISTER. Exceptions should be filed in quadruplicate.

Preliminary statement. A public hearing, on the record of which the proposed amendment to the tentative marketing agreement and the order, as amended, were formulated, was called by the Production and Marketing Administration, United States Department of Agriculture, following receipt of a proposed amendment, filed by the Joint Fall River Sales Committee of the New England Milk Producers' Association and the Fall River Milk Producers' Association. The hearing was held at Fall River, Massachusetts, on June 21, 1948 pursuant to a notice published in the FEDERAL REGISTER (13 F. R. 3257) on June 16, 1948.

The only issue on the record of the hearing was the question of whether the Class I price for the Fall River market for the months of July through December 1948, should be increased by 22 cents per hundredweight over the prices which would otherwise be determined by § 947.6 (a) of the order.

Findings and conclusions. The record indicates that during recent years receipts of milk from regular producers have been less than fluid milk sales in this market during all seasons of the year. In November 1947 producer deliveries were about 54 percent of Class I sales, and in May 1948, about 79 percent. Since Fall River is surrounded by other milk markets competing for the supply of milk in the same area, expansion of the Fall River milkshed in the nearby area could be accomplished only by securing new producers who are now supplying these other competing markets. In order to obtain a sufficient supply of milk for Class I use, Fall River handlers have been using large volumes of milk from other areas, and in recent months this supplementary milk has come principally from plants in Northern New England regulated under the Federal order for the Boston market. Since other milk markets near to Fall River also do not receive enough milk from their regular producers for fluid milk requirements, these markets seek other sources of milk supply and a principal source of such supplementary supplies for these other markets similarly has been Northern New England plants operated under the Boston order.

It was indicated in the record that such additional supplies of milk from Northern New England plants were obtained in the region about 200 miles or more from the Greater Boston marketing area. For such milk, Fall River handlers have been paying the applicable Class I zone price under the Boston order plus the cost of transporting such milk to Fall River, and a country plant handling charge varying with the season and type of purchase from about 40 cents to 90 cents per hundredweight. Since the country plant handling charges are highest on purchases made in the short season of the year, which is also the time when Fall River handlers have greatest need for supplementary milk supplies, the higher rates of handling charges are paid on much of the milk Fall River handlers purchase from these country plants. It was indicated also in the record that milk received at plants in the Boston pool is generally used by the receiving handler first to supply the Boston market, and that handlers in a secondary market, such as Fall River, which do not have established sources for supplementary supplies of milk, generally must obtain such milk supplies from the more distant country plants from which the cost of transportation is higher.

Since there is not adequate rail service to Fall River for receiving milk, the milk brought in from Northern New England must be transported by truck. For milk brought in to Fall River from points in Vermont, in the 201–210 mile zone under the Boston order, the trucking cost in 200-can lots is about 55 to 70 cents per hundredweight. Considerable volumes of milk for the Fall River market come from more distant points. Cost of transportation by tank truck exceeds 46 cents per hundredweight.

The cost of supplementary milk supplies to other competing markets in this

area is approximately the same as for Fall River handlers. If the price received by Fall River producers is less than the prices handlers in neighboring markets are paying for milk either from their own producers or from Northern New England sources, handlers in these other markets would find it to their advantage to offer Fall River producers a price higher than these producers receive in the Fall River market. In order to maintain the present supply of local milk for the Fall River market, it is therefore necessary under these conditions that prices received by Fall River producers be at a level comparable with prices paid in nearby markets for local supplies and for milk brought in from Northern New England plants. The proposal submitted by producers would bring the Fall River prices more nearly in line with the cost of milk from alternate sources of supply and with prices paid in neighboring markets.

It is indicated in the record that in view of a likely shortage of milk in this area again this fall and winter, the automatic surplus and shortage price adjustment provided in the order is expected to operate to increase the Class I price effective January 1, 1949 by 44 cents over what the price otherwise would be. The surplus and shortage adjustment provides that the Class I price shall be increased by 44 cents per hundredweight over the price shown in the schedule in § 947.6 (a) (5), if under the Boston order less than 33 percent of the milk received by all pool handlers from producers during the 12-month period ending with the second preceding month was Class II milk. This adjustment would operate simultaneously in the Fall River, Boston, and Lowell-Lawrence markets, but under the provisions of the orders for these markets cannot operate until January 1, 1949. Since this adjustment will probably operate to increase the price in January 1949 and maintain a higher level of prices for Class I milk until the shortage is alleviated, it is expected that this adjustment will aid in maintaining a level of prices in the Fall River market comparable to prices paid producers in neighboring markets. Representatives of producers therefore did not consider it necessary at this time to request any price adjustment for the period beyond the last six months of 1948. Furthermore, it is not known what realignment of prices in New England markets might result from the expected surplus and shortage price adjustment in the Boston, Lowell-Lawrence, and Fall River markets, and consequently it is not possible to make any determination at this time on price relationships between this market and other markets beyond December 1948. Termination of the proposed 22 cents per hundredweight increase at the same time at which the surplus and shortage adjustment becomes effective would restore the present relationship between the Fall River and Boston Class I prices.

It is concluded that the proposed increase in the Class I prices for the remaining months of 1948 is necessary to maintain the supply of milk for this market, and it is recommended that the proposed amendment be adopted to provide such increase for each delivery period prior to January 1, 1949. Proponents, in their brief, recommended that in view of the need for prompt action on the proposal, the recommended decision should be omitted and a final decision should be issued. Although it is urgent that the proposed amendment be adopted as soon as possible, it is desirable that the regular rules of procedure be followed. In view of the need for early action on this amendment, the allowance of three days for filing exceptions is reasonable.

General. (a) The proposed marketing agreement and the order, as amended and as hereby proposed to be further amended, and all of the terms and conditions thereof, will tend to effectuate the declared policy of the act;

(b) The proposed marketing agreement and the order, as amended and as hereby proposed to be further amended, regulates the handling of milk in the same manner and is applicable only to persons in the respective classes of industrial and commercial activity specified in the said tentatively approved marketing agreement upon which the hearings have been held; and

(c) The prices calculated to give milk produced for sale in the said marketing area a purchasing power equivalent to the purchasing power of such milk as determined pursuant to section 2 and section 8 (e) of the act are not reasonable in view of the price of feed, available supplies of feeds, and other economic conditions which affect market supply and demand for such milk, and the minimum prices specified in the proposed marketing agreement and the order, as amended and as hereby proposed to be further amended, are such as will reflect the aforesaid factors, insure a sufficient quantity of pure and wholesome milk, and be in the public interest.

Recommended amendment to the order The following amendment to the order, as amended, is recommended as the detailed and appropriate means by which the foregoing conclusions may be carried out. The amendment to a proposed marketing agreement is not repeated because it would be identical with the following:

In § 947.6 (a) (5) after the words "in the following table:" add the proviso: *"Provided,* That for each delivery period prior to January 1, 1949 the Class I price per hundredweight shall be the applicable price shown in the following table, plus 22 cents."

Issued at Washington, D. C., this 6th day of July 1948.

[SEAL] JOHN I. THOMPSON,
Assistant Administrator, Production and Marketing Administration.

[F. R. Doc. 48-6151; Filed, July 9, 1948; 8:48 a. m.]

NOTICES

DEPARTMENT OF THE NAVY

[No. 5 (c)]

SEAPLANE TENDERS, AV7 CLASS

CERTIFICATE OF SECRETARY OF NAVY

Certificate of the Secretary of the Navy under the act of December 3, 1945 (Public Law 239, 79th Congress, as amended by Public Law 433, 80th Congress.

Whereas, the act of December 3, 1945 (Public Law 239, 79th Congress, as amended by Public Law 433, 80th Congress) provides that any requirement as to the number, position, range of visibility or arc of visibility of navigation lights, required to be displayed by naval vessels under acts of Congress, as enumerated in said act of December 3, 1945, as amended, shall not apply to any vessel of the Navy where the Secretary of the Navy shall find or certify that, by reason of special construction, it is not possible with respect to such vessel or class of vessels to comply with statutory requirements as to the number, position, range of visibility or arc of visibility of navigation lights; and

Whereas, a study of the arrangement and position of the navigation lights of that type of naval vessels known as Sea plane Tenders, AV7 Class, has been made in the Navy Department and, as a result of such study, it has been determined that because of their special construction it is not possible for Seaplane Tenders, AV7 Class, to comply with the requirements of the statutes enumerated in said act of December 3, 1945, as amended:

Now therefore, I, John L. Sullivan, Secretary of the Navy, as a result of the aforesaid study do hereby find and certify that the type of naval vessels known as Seaplane Tenders, AV7 Class, are naval vessels of special construction and that on each such vessels, with respect to the position of the additional white light (commonly termed the range light), it is not possible to comply with the requirements of the statutes enumerated in the act of December 3, 1945, as amended. Further, I do find and certify that it is feasible to locate the said additional white light (commonly termed the range light), if such light is installed, forward of the masthead light in such position that the said additional white light and the masthead light shall be in line with the keel and the after light shall be at least fifteen feet higher than the forward light and the vertical distance between the two lights shall be less than the horizontal distance. I further di-

rect that the aforesaid additional white light, if such light is installed, shall be located in the manner above described and I further certify that such location constitutes compliance as closely with the applicable statutes as I hereby find to be feasible.

Dated at Washington, D. C., this 30th day of June A. D. 1948.

JOHN L. SULLIVAN,
Secretary of the Navy.

[F. R. Doc. 48-6142; Filed, July 9, 1948; 8:45 a. m.]

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

[No. 5]

GILA IRRIGATION PROJECT, YUMA MESA DIVISION, ARIZONA

PUBLIC NOTICE OF ANNUAL WATER RENTAL CHARGE

JUNE 16, 1948.

1. *Water rental.* Irrigation water will be furnished, when available and where the progress of construction contemplated herein will permit, upon a rental basis under approved applications for temporary water service from and after July 1, 1948, and thereafter until further notice, to lands in the Yuma Mesa Division situate within the North and South Gila Valleys; to public lands in said Division under Pumping Plant No. 1, and also to those private and State lands in said Division under Pumping Plant No. 1 described below:

PRIVATE LANDS

GILA AND SALT RIVER MERIDIAN, ARIZONA

T. 8 S., R. 23 W..
Sec. 33 S½SE¼,
Sec. 34 SW¼, NW¼SE¼ lying S. of S. P. R. R.
T. 9 S., R. 22 W..
Sec. 3 E½SW¼,
Sec. 5 E½SW¼ lying S. of S. P. R. R.,
Sec. 6 W½SW¼, SW¼NW¼ lying S. of S. P. R. R.,
Sec. 8 N½NE¼, N½NW¼,
Sec. 9 N½, NW¼SE¼.
T. 9 S., R. 22 W..
Sec. 17 NW¼NW¼,
Sec. 19 E½,
Sec. 20 E½SW¼,
Sec. 29 W½NW¼,
Sec. 30 SE¼NW¼, NE¼,
Sec. 31 S½SW¼.
T. 9 S., R. 23 W..
Sec. 1 S½,
Sec. 3 W½,
Sec. 4 NE¼, N½SE¼, E½SW¼,
Sec. 16 N½NE¼SE¼, NW¼SW¼, N½N½S½SW¼,
Sec. 25 SE¼,
Sec. 35 E½,
Sec. 36 W½, E½ lying W. of A-7.4 lat.
T. 10 S., R. 22 W..
Sec. 6 W½NW¼.
T. 10 S., R. 23 W..
Sec. 1 NW¼NE¼, SW¼, W½SE¼,
Sec. 16 NW¼, N½NE¼.

STATE LANDS

GILA AND SALT RIVER MERIDIAN, ARIZONA

T. 9 S., R. 22 W..
Sec. 30 SW¼.
T. 9 S., R. 23 W..
Sec. 16 W½NE¼, S½NE¼SE¼, S½N½S½SW¼, S½S½SW¼.
T. 10 S., R. 23 W..
Sec. 2 All.

2. *Charges and terms of payment.* Water rental charges shall be payable in advance of the delivery of water at rates as follows:

(a) For lands in the Yuma Mesa Division situate within the North and South Gila Valleys irrigated hereunder before July 1 of any year, the minimum charge shall be $3.00 per acre for each acre of land for which water service is requested, payment of which will entitle the applicant to 4 acre-feet of water per acre; additional water will be furnished at the rate of $0.75 per acre-foot. For such lands not irrigated before July 1 of any year but receiving water after that date, the minimum charge shall be $1.50 per acre for each acre of land for which water service is requested, payment of which will entitle the applicant to 2 acre-feet of water per acre; additional water will be furnished at the rate of $0.75 per acre-foot.

(b) For public lands in the Yuma Mesa Division under Pumping Plant No. 1 leased for a portion of a calendar year, unless otherwise stipulated in the lease, there will be a charge of $0.75 per acre-foot for the first 8 acre-feet of water ordered and a charge of $0.85 per acre-foot for all additional water ordered.

(c) For the remaining lands in the Yuma Mesa Division under Pumping Plant No. 1 irrigated hereunder before July 1 of any year, the minimum charge shall be $6.00 per acre for each acre of land for which water service is requested, payment of which will entitle the applicant to 8 acre-feet of water per acre. Additional water will be furnished at the rate of $0.85 per acre-foot.

(d) For the remaining lands in the Yuma Mesa Division under Pumping Plant No. 1 not irrigated hereunder before July 1 of any year but receiving water after that date, there will be a charge of $0.75 per acre-foot for the first 4 acre-feet of water ordered during that year and a charge of $0.85 per acre-foot for all additional water ordered during that year.

3. The charges set out in paragraph 2 above shall be applicable to sprinkler irrigation as well as to other irrigation methods. Water ordered, whether for sprinkler irrigation or for irrigation by any other method, shall be measured at the turnout where delivery is made to the applicant.

4. The presently constructed distribution system for lands in the Yuma Mesa Division under Pumping Plant No. 1 generally provides single turnout facilities for legal subdivisions of private lands comprising approximately 80 gross acres. Under present plans the Bureau contemplates the construction of additional water service facilities upon application therefor, subject to the conditions stated below, for units lacking individual water service facilities which constitute portions of such subdivisions and which comprised not less than approximately 40 gross acres as of December 31, 1947, according to records of the County Recorder of Yuma County, Arizona. Each request for the construction of such facilities shall be accompanied by a deposit of the minimum per-acre charge mentioned in paragraph 2 (c) above and by evidence satisfactory to the superintendent of the Gila Project that the applicant will proceed as expeditiously as practicable with the agricultural development of the unit. Such construction will be limited to the extent deemed by the Bureau to be practicable and prosecution thereof will be subject to the availability of funds therefor; such construction will be scheduled for completion within six months from the approval of such request. Upon approval of such request, the above-mentioned deposit shall be credited to the applicant's account and thereafter applied against charges made pursuant to paragraphs 2 (c) or 2 (d) above in connection with water delivered to said unit. The Bureau does not presently contemplate the construction of facilities in the North and South Gila Valleys for the distribution of water under this notice.

5. Except as otherwise provided in the Reclamation Laws (Act of June 17, 1902, 32 Stat. 388, as amended or supplemented) no water will be delivered hereunder to any lands which constitute "excess lands" within the meaning of said laws.

6. Applications for temporary water service may be made by the landowner or by anyone who presents evidence satisfactory to the superintendent of the Gila Project that he is the tenant or lessee of the land for which water is requested, or that he has been authorized by the owner to make a water rental application for such land.

7. Applications for temporary water service and the payments required by this notice will be received at the office of the Superintendent, Gila Project, Yuma, Arizona.

(Act of June 17, 1902, 32 Stat. 388, as amended or supplemented)

E. A. MORITZ,
Regional Director.

[F. R. Doc. 48-6147; Filed, July 9, 1948; 8:46 a. m.]

[No. 5]

TUCUMCARI IRRIGATION PROJECT, NEW MEXICO

ANNOUNCEMENT OF ANNUAL WATER RENTAL CHARGES

JUNE 2, 1948.

1. I have determined that it is factually impossible, in view of the provision for construction of distribution works by the United States under the contract with the Arch Hurley Conservancy District dated December 27, 1938, to make water available for irrigation use during the season of 1949 as contemplated in article 8 of the contract.

2. *Water rental.* Pursuant to article 10 of the contract of December 27, 1938, irrigation water will be furnished, when available, upon a rental basis during the irrigation season of 1949, where the progress of construction will permit, to the irrigable lands in the Arch Hurley Conservancy District described below:

Units Nos. 1, 2, 3, 4, and 5. Water to be furnished beginning about April 1, 1949.

Unit No. 6. Water to be furnished to lands for which distribution facilities are com-

pleted during or prior to the irrigation season, 1949.

Irrigable lands shall be as designated by the Secretary under date of February 5, 1948, and described in detail in Appendix No. 1, Tabulation of Irrigable Areas, dated October 8, 1947, for Units 1 through 5, and in Appendix No. 2, Tabulation of Irrigable Areas, dated August 4, 1947, for Unit 6, including any subsequent corrections, amendments or modifications thereof. Any qualified water user wishing to ascertain the irrigability of any tract of land may do so by examining copies of these designations in the office of the Arch Hurley Conservancy District.

3. *Changes and terms of payment*— (a) *Units 1, 2, 3, 4, and 5.* The minimum water rental charge for irrigable land within the boundaries of Units 1, 2, 3, 4, and 5, as above described shall be $2.50 per irrigable acre, payment of which will entitle the water user to one and one-third acre-feet of water per irrigable acre. Additional water will be furnished during the irrigation season at the following rates:

Next two-thirds acre-foot: $1.00 (at a rate of $1.50 per acre-foot).

Third and additional acre-feet per acre: $2.00 per acre-foot.

(b) *Unit 6.* The minimum water rental charge for irrigable land within the boundaries of Unit 6 as above described shall be $1.00 per irrigable acre for each irrigable acre of land for which water service is requested, payment of which will entitle the water user to one acre-foot of water per irrigable acre. Additional water will be furnished during the irrigation season at the following rates:

Second acre-foot per acre: $1.00 per acre-foot.

Third and additional acre-feet per acre: $1.50 per acre-foot.

All charges shall be payable by the District to the United States in advance of the delivery of water.

4. Water will be delivered and measured by Government forces at the nearest available measuring device to the individual farm.

5. The District will request water delivery for, and certify to the United States as entitled to receive water, only such lands as are owned or are held under contract of purchase by persons duly qualified to receive water under the terms of the Reclamation Act of June 17, 1902 (32 Stat. 388) and acts of Congress supplementary thereto or amendatory thereof, and who have duly complied with the requirements of the contracts of December 27, 1938, between the United States and the District, including:

(a) The execution and delivery of the recordable contract as provided for in article 30 (b) of said contract;

(b) The execution and delivery of the valid recordable contract, in the case of ownership of excess land, as provided for in articles 30 (a) and 32 of said contracts.

6. Individual applications for water on forms approved by the United States and the payments required by this announcement will be received at the office of the Secretary of the Arch Hurley Conservancy District, Tucumcari, New Mexico. Requests by the District for water for such lands as are entitled to receive water and payments by the District to the United States will be received at the office of the Bureau of Reclamation, Tucumcari, New Mexico.

(Act of June 17, 1902, 32 Stat. 388, as amended or supplemented)

H. E. ROBBINS,
Regional Director

[F. R. Doc. 48-6146; Filed, July 9, 1948; 8:45 a. m.]

FEDERAL POWER COMMISSION

[Docket No. E-6125]

SOUTHWESTERN POWER ADMINISTRATION

NOTICE OF ORDER MODIFYING ORDER CONFIRMING AND APPROVING TEMPORARY RATE SCHEDULE

JULY 6, 1948.

Notice is hereby given that, on July 1, 1948, the Federal Power Commission issued its order entered June 30, 1948, in the above-designated matter, modifying order confirming and approving temporary rate schedule for an additional period ending July 31, 1948.

[SEAL] LEON M. FUQUAY,
Secretary.

[F. R. Doc. 48-6153; Filed, July 9, 1948; 8:48 a. m.]

[Docket Nos. G-585, G-796]

ALABAMA-TENNESSEE NATURAL GAS CO. AND SOUTHERN NATURAL GAS CO.

NOTICE OF ORDER MODIFYING INITIAL DECISION OF PRESIDING EXAMINER ISSUING CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

JULY 6, 1948.

Notice is hereby given that, on July 2, 1948, the Federal Power Commission issued its order entered July 1, 1948, modifying initial decision of Presiding Examiner issuing certificate of public convenience and necessity in the above-designated matters.

[SEAL] LEON M. FUQUAY,
Secretary.

[F. R. Doc. 48-6154; Filed, July 9, 1948; 8:48 a. m.]

SECURITIES AND EXCHANGE COMMISSION

[File No. 70-1876]

PUBLIC SERVICE CO. OF NEW HAMPSHIRE

NOTICE OF FILING

At a regular session of the Securities and Exchange Commission, held at its office in the city of Washington, D. C., on the 2d day of July A. D. 1948.

Notice is hereby given that an application, and an amendment thereto, has been filed with this Commission, pursuant to the Public Utility Holding Company Act of 1935, by Public Service Company of New Hampshire ("New Hampshire"), a public utility subsidiary of New England Public Service Company, a registered holding company. Applicant designates the first sentence of section 6 (b) of the act as applicable to the proposed transactions.

Notice is further given that any interested person may, not later than July 14, 1948, at 5:30 p. m., e. d. s. t., request the Commission in writing that a hearing be held on such matter, stating the nature of his interest, the reasons for such request and the issues, if any, of fact or law raised by said application which he desires to controvert, or may request that he be notified if the Commission should order a hearing thereon. Any such request should be addressed: Secretary, Securities and Exchange Commission, 425 Second Street NW., Washington 25, D. C. At any time after July 14, 1948, said application, as amended, may be granted as provided in Rule U-23 of the rules and regulations promulgated under the act, or the Commission may exempt such transactions as provided in Rules U-20 (a) and U-100 thereof.

All interested persons are referred to said application and amendment which are on file in the offices of this Commission for a statement of the transactions therein proposed, which are summarized as follows:

New Hampshire proposes to borrow from one or more banks, from time to time, until the company shall have received at least $5,000,000 from permanent financing, a maximum amount of $5,550,000 (including $1,200,000 outstanding notes as of June 15, 1948) and to issue or renew, from time to time, in evidence thereof, its promissory notes with a maturity of nine months or less. However, it is stated that the authority herein applied for shall not extend beyond December 1, 1948 without further order of the Commission. It is further stated that the proceeds of the short-term notes will be used to carry out the company's construction program for the balance of the year 1948. The application states that the company believes that under present conditions it will be able to borrow the additional funds required prior to completion of such permanent financing at an interest rate of not exceeding 2% per annum, but that it has no commitment from any bank as to the interest rate. The application further states that in case the interest rate on any of the promissory notes should exceed 2% per annum, the company will file an amendment to its application stating the name of the bank, the terms of the note and the rate of interest at least five days prior to the execution and delivery of said note, and unless the Commission shall notify the company to the contrary within said five day period, the amendment shall become effective at the end of said period.

The application further states that it is the company's present intention to issue and sell at least $5,000,000 principal amount of First Mortgage Bonds prior to October 31, 1948. It is further stated that the proceeds from such permanent financing will be used to repay short-term borrowings then outstanding and the balance, if any, for further expendi-

tures on the company's construction program and for other corporate purposes.

It is represented by applicant that the proposed transactions are not subject to the jurisdiction of the New Hampshire Public Service Commission, the State commission of the State in which applicant is organized and doing business.

The amount of notes proposed to be issued by New Hampshire is in excess of 5% of the principal amount and par value of other outstanding securities of the company. The company requests authorization, pursuant to the first sentence of section 6 (b) of the act, to issue such notes.

New Hampshire requests that the Commission's order be issued by July 17, 1948 and that such order become effective forthwith.

By the Commission.

[SEAL] ORVAL L. DUBOIS, *Secretary.*

[F. R. Doc. 48-6149; Filed, July 9, 1948; 8:47 a. m.]

[File No. 30-171]

PORTLAND GENERAL ELECTRIC CO.

NOTICE OF FILING OF APPLICATION

At a regular session of the Securities and Exchange Commission, held at its office in the city of Washington, D. C., on the 1st day of July A. D. 1948.

Notice is hereby given that an application has been filed with this Commission pursuant to section 5 (d) of the Public Utility Holding Company Act of 1935, by Portland General Electric Company, a registered holding company, for an order, under said act, declaring that the company has ceased to be a holding company.

Notice is further given that any interested person may, not later than July 16, 1948, at 5:30 p. m., e. d. s. t., request the Commission in writing that a hearing be held on such matter, stating the reasons for such request, the nature of his interest, and the issues, if any, of fact or law raised by said application which he desires to controvert, or may request that he be notified if the Commission should order a hearing thereon. Any such request should be addressed: Secretary, Securities and Exchange Commission, 425 Second Street NW., Washington 25, D. C.

All interested persons are referred to said application which is on file in the offices of this Commission for a complete statement of the requested finding and order, which is summarized as follows:

The application states that Portland General Electric Company does not now, directly or indirectly, own, control or hold with power to vote, or otherwise, any of the outstanding securities of a public utility company or of a company which is a holding company within the provisions of the act. Accordingly, it requests the entry of an order by the Commission, pursuant to section 5 (d) of the act, finding and declaring that it has ceased to be a holding company and that its registration as a holding company has ceased to be in effect. The application further states that Portland General Electric Company, on September 24, 1947, sold to Galbraith and Company of Portland, Oregon, all of its holdings of common stock (consisting of 1300 shares) of Seattle Gas Company for a consideration of $9,360. Applicant represents that such sale was exempt from the act by reason of the provisions of Rule U-44 (b) (1) However, since our order of April 17, 1945, pursuant to Rule U-100 (b) suspending the exemption granted by Rule U-44 (b) (2) insofar as it affected any sales of securities of Seattle Gas Company by Portland General Electric Company, may have been interpreted to require our approval of the above sale, the company requests that the Commission's order also confirm and approve such sale.

By the Commission.

[SEAL] ORVAL L. DUBOIS, *Secretary.*

[F. R. Doc. 48-6150; Filed, July 9, 1948; 8:47 a. m.]

DEPARTMENT OF JUSTICE

Office of Alien Property

AUTHORITY: 40 Stat. 411, 55 Stat. 839, Pub. Laws 322, 671, 79th Cong., 60 Stat. 50, 925; 50 U. S. C. and Supp. App. 1, 616, E. O. 9193, July 6, 1942, 3 CFR, Cum. Supp., E. O. 9567, June 8, 1945, 3 CFR, 1945 Supp., E. O. 9783, Oct. 14, 1946, 11 F. R. 11981.

[Vesting Order 11309, Amdt.]

SAIHACHI MIYAMOTO

In re: Real property, a leasehold estate and a claim owned by the personal representatives, heirs, next of kin, legatees and distributees, names unknown, of Saihachi Miyamoto, deceased.

Vesting Order 11309, dated June 1, 1948, is hereby amended as follows and not otherwise:

By deleting therefrom, Exhibit B which is attached thereto and made a part thereof and substituting therefor Exhibit B, which is attached hereto and made a part hereof;

All other provisions of said Vesting Order 11309 and all actions taken by and on behalf of the Attorney General of the United States in reliance thereon, pursuant thereto and under the authority thereof are hereby ratified and confirmed.

Executed at Washington, D. C., on July 2, 1948.

For the Attorney General.

[SEAL] HAROLD I. BAYNTON, *Deputy Director, Office of Alien Property.*

EXHIBIT B

All that certain piece or parcel of land situate at Kapalama, Honolulu, City and County of Honolulu, Territory of Hawaii, containing an area of 7500 square feet, comprising Lot 168-A of Section "A" as delineated on Subdivision Map or Plan of Section "A" Land Court Application 750, approved by the Land Court of the Territory of Hawaii on August 6, 1928, and filed with the Assistant Registrar of said Land Court, and being a portion of the land described in Owners' Transfer Certificate of Title No. 28715 issued to the Trustees of the Bernice P. Bishop Estate, recorded in the Office of the Registrar of Conveyances, Honolulu, Territory of Hawaii, in Registration Book 283, Page 59.

Together with the buildings thereon.

[F. R. Doc. 48-6153; Filed, July 9, 1948; 8:50 a. m.]

[Vesting Order 11493]

FRANCES HOYER

In re: Estate of Frances Hoyer, deceased. File No. D-28-12171; E. T. sec. 16375.

Under the authority of the Trading With the Enemy Act, as amended, Executive Order 9193, as amended, and Executive Order 9788, and pursuant to law, after investigation, it is hereby found:

1. That Sophie Lang Bernhardt and Theodor Lang, whose last known address is Germany, are residents of Germany and nationals of a designated enemy country (Germany),

2. That all right, title, interest and claim of any kind or character whatsoever of the persons named in subparagraph 1 hereof in and to the Estate of Frances Hoyer, deceased, is property payable or deliverable to, or claimed by, the aforesaid nationals of a designated enemy country (Germany)

3. That such property is in the process of administration by Fenton Garfield, as executor, acting under the judicial supervision of the Superior Court of the State of California in and for the County of Los Angeles;

and it is hereby determined:

4. That to the extent that the persons named in subparagraph 1 hereof are not within a designated enemy country, the national interest of the United States requires that such persons be treated as nationals of a designated enemy country (Germany).

All determinations and all action required by law, including appropriate consultation and certification, having been made and taken, and, it being deemed necessary in the national interest,

There is hereby vested in the Attorney General of the United States the property described above, to be held, used, administered, liquidated, sold or otherwise dealt with in the interest of and for the benefit of the United States.

The terms "national" and "designated enemy country" as used herein shall have the meanings prescribed in section 10 of Executive Order 9193, as amended.

Executed at Washington, D. C., on June 25, 1948.

For the Attorney General.

[SEAL] DAVID L. BAZELON, *Assistant Attorney General, Director, Office of Alien Property.*

[F. R. Doc. 48-6157; Filed, July 9, 1948; 8:50 a. m.]

OTTO CONSTRUCTION CORP.

NOTICE OF INTENTION TO RETURN VESTED PROPERTY

Pursuant to section 32 (f) of the Trading with the Enemy Act, as amended, notice is hereby given of intention to

return, on or after 30 days from the date of publication hereof, the following property located in Washington, D. C., including all royalties accrued thereunder and all damages and profits recoverable for past infringement thereof, after adequate provision for taxes and conservatory expenses:

Claimant, Claim No. and Property

Otto Construction Corp., 225 West 34th Street, New York, N. Y., 4318; property described in Vesting Order No. 201 (8 F. R. 625, October 2, 1942) relating to United States Letters Patent Nos. 1,674,007, 1,696,446, 1,698,272, 1,760,770, 1,798,129, 1,805,922, 1,810,495, 1,824,922, 1,830,958, 1,833,494, 1,847,098, 1,887,214, 1,904,516, 1,918,926, 1,949,177, 1,990,089, 2,003,271, 2,004,266, 2,008,658, 2,018,223, 2,037,587, 2,065,288, 2,126,239, 2,132,641, and in Vesting Order No. 664 (8 F. R. 4989, January 18, 1943) relating to United States Letters Patent Nos. 1,707,537, 1,748,142, 1,827,328, 1,658,229, and in Vesting Order No. 671 (8 F. R. 5004, January 18, 1943) relating to United States Letters Patent No. 2,158,491.

Executed at Washington, D. C., on June 30, 1948.

For the Attorney General.

[SEAL] HAROLD I. BAYNTON,
Deputy Director,
Office of Alien Property.

[F. R. Doc. 48-6140; Filed, July 8, 1948; 8:59 a. m.]